

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 z
 Edition : 21.06.91
 Replaces : 24.4.91
 Test oil : ISO-4113

Combination no. : 0 401 876 775

Injection pump
 Pump designation : PE6P110A320LS3835-3
 EP type number : 0 411 816 773
 Governor
 Governor design. : RSV350...1050POA531-
 2
 Governor no. : 0 421 833 343

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 441

1st version kW : 160.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

AD1

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 13.6...13.8
 100 s: (13.3...14.0)

Spread cm³ : 0.4
 100 s: (0.8)

2nd speed rpm : 350.0
 Rack travel in mm : 8.3...8.9
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)

Spread cm³ : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1030
 Del.quantity : 136.0...138.0
 1000 : (133.5...140.5)

Spread cm³ : 4.00
 1000 : (8.00)

RATED SPEED

1st version
 Control lever
 position degrees: 88...96

Testing:

1st rack travel in: 12.50
Speed rpm : 1070...1080
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 64...72
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 8.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 8.30...8.90
Rack travel in mm : 2.00
Speed rpm : 380...440

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 124.0...128.0
1000 s: (121.0...131.0)
Spread cm3 : 6.00
1000 s: (8.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50
Speed rpm : 1070...1080

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

Observe VDT-I-420/120

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 10,0 a1
 Edition : 18.02.91
 Replaces : 25.1.91
 Test oil : ISO-4113
 Combination no. : 0 402 035 022
 Injection pump
 Pump designation : PES5P120A720/3LS512
 EP type number : 0 412 025 021
 Governor
 Governor design. : RQ325/1000PA813-14
 Governor no. : 0 421 801 530

Customer-spec. information

Customer : MAN
 Engine : D2865LF02

1st version kW : 199.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Orifice plate diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 5

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 11.10...11.20
 Del.quantity cm3/ : 21.7...21.9
 100 s: (21.4...22.2)
 Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 325.0
 Rack travel in mm : 4.2...4.6
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del.quantity : 217.0...219.0
 1000 : (214.0...222.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 9.90

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1115...1145
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 4.4

Testing:

Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 325
Rack travel in mm : 4.30...4.50
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.90...11.00
2nd speed rpm : 750
Rack travel in m: 11.30...11.50
3rd speed rpm : 850
Rack travel in m: 11.10...11.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.30...8.50
2nd pressure hPa : 100
Rack travel in m: 8.70...8.80
3rd pressure hPa : 350
Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1000

Del.quantity cm3/ : 213.0...217.0
1000 s: (210.0...220.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 207.0...213.0
1000 s: (204.0...216.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.90
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.20...4.60
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 3-7043
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 5
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a42
 Edition : 28.06.91
 Replaces : 6.7.90
 Test oil : ISO-4113
 Combination no. : 0 402 036 081
 Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1000PA813-16
 Governor no. : 0 421 801 531

Customer-spec. information
 Customer : MAN

Engine : D2866LF 04..LH01
 1st version kw : 221.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

A05

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.30...10.40

Del.quantity cm3/ : 18.5...18.7

100 s: (18.2...19.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.7...4.9

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 185.0...187.0

1000 : (182.0...190.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.20
Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1100...1130
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.8

Testing:
Speed rpm : 100
Minimum rack travel: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 355...395

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 10.90...11.10
3rd speed rpm : 850
Rack travel in m: 10.50...10.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.30...10.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 85
Rack travel in m: 9.30...9.40
3rd pressure hPa : 160
Rack travel in m: 9.70...10.00

START CUT-OUT

Speed 1/min : 190 (210)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000

Del.quantity cm3/ : 191.0...197.0
1000 s: (188.0...200.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 176.0...182.0
1000 s: (173.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.70...4.90
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7053

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a43
 Edition : 28.06.91
 Replaces : 14.9.90
 Test oil : ISO-4113

Combination no. : 0 402 036 082

Injection pump
 Pump designation : PES6P120A720/3LS470-2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQV300...1000PA876-7
 Governor no. : 0 421 813 867

Customer-spec. information
 Customer : MAN

Engine : D2866LF 04..LH01

1st version kW : 221.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

A07

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 18.5...18.7

100 s: (18.2...19.0)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.7...4.9
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1045
 travel mm : 9.90...10.10
 2nd speed rpm : 300
 travel mm : 1.60...1.80
 3rd speed rpm : 500
 travel mm : 3.40...4.00
 4th speed rpm : 800
 travel mm : 6.70...7.10
 5th speed rpm : 1250
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750

Aneroid pressure h: 1000
Del.quantity : 185.0...187.0
1000 : (182.0...190.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 296...304

Testing:
1st rack travel in: 9.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 256...264

Testing:
Speed rpm : 100
Minimum rack trave: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90

CONSTANT REGULATION
Speed rpm : 280...390

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 10.20...10.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.20...10.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 85
Rack travel in m: 9.30...9.40
3rd pressure hPa : 160
Rack travel in m: 9.70...10.00

A08

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm³/ : 191.0...197.0
1000 s: (188.0...200.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm³/ : 176.0...182.0
1000 s: (173.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.70...4.90
Del.quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7054

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 g⁹
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 086
 Injection pump
 Pump designation : PES6P110A720/3LS477-
 2
 EP type number : 0 412 016 071
 Governor
 Governor design. : RQ250/1050PA845
 Governor no. : 0 421 801 604

Customer-spec. information
 Customer : MAN

Engine : D2866 F/UM

1st version kW : 152.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.90...11.00

Del.quantity cm³/ : 10.0...10.3

100 s: (9.7...10.5)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.0...6.2

Del.quantity cm³/ : 1.5...2.0

100 s: (1.2...2.2)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del.quantity : 100.0...103.0

1000 : (97.5...105.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.90

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1170...1200

4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack trave: 7.60
Speed rpm : 250
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 320...360

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 10.90...11.00
2nd speed rpm : 1050
Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del.quantity cm³/ : 111.0...115.0
1000 s: (108.0...118.0)
Speed rpm : 500
Del.quantity cm³/ : 91.0...95.0
1000 s: (88.0...98.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.90
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 110.0...130.0
1000 s: (106.0...134.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.00...6.20

Del.quantity cm³/ : 15.0...20.0
1000 s: (12.5...22.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

: MAN-NR. 3-7166

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9g10
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 086
 Injection pump
 Pump designation : PES6P110A720/3LS477-
 2
 EP type number : 0 412 016 071
 Governor
 Governor design. : RQ250/1050PA845-2
 Governor no. : 0 421 801 604

Customer-spec. information
 Customer : MAN

Engine : D2866 F/UM

1st version kW : 152.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.90...11.00

Del.quantity cm3/ : 10.0...10.3

100 s: (9.7...10.5)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.0...6.2

Del.quantity cm3/ : 1.5...2.0

100 s: (1.2...2.2)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del.quantity : 100.0...103.0

1000 : (97.5...105.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.90

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1170...1200

4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 7.60
Speed rpm : 250
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 330...370

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 10.90...11.00
2nd speed rpm : 1050
Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del.quantity cm³/ : 111.0...115.0
1000 s: (108.0...118.0)
Speed rpm : 500
Del.quantity cm³/ : 91.0...95.0
1000 s: (88.0...98.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.90
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 110.0...130.0
1000 s: (106.0...134.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.00...6.20

Del.quantity cm³/ : 15.0...20.0
1000 s: (12.5...22.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

: MAN-NR. 3-7166

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a45
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 087
 Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA813-6
 Governor no. : 0 421 801 466

Customer-spec. information
 Customer : MAN

Engine : D2866TUH/001

1st version kW : 222.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6-2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 11.20...11.30
 Del.quantity cm³/ : 19.5...19.7
 100 s: (19.2...20.0)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.2...5.4
 Del.quantity cm³/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 750
 Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del.quantity : 195.0...197.0
 1000 : (192.0...200.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 750
 Rack travel in mm : 15.5

Testing:

1st rack travel in: 10.20
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 300
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 390...430

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.60...11.70
2nd speed rpm : 1050
Rack travel in m: 11.50...11.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.20...11.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 270
Rack travel in m: 9.10...9.20
3rd pressure hPa : 450
Rack travel in m: 10.10...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050
Del.quantity cm³/ : 204.0...208.0
1000 s: (201.0...211.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.20...5.40
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 3-7167

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,1q28
 Edition : 21.06.91
 Replaces : 11.85
 Test oil : ISO-4113

Combination no. : 0 402 046 266

Injection pump
 Pump designation : PES6P120A720LS388
 EP type number : 0 412 026 030
 Governor
 Governor design. : RQ250/1050PA658-8
 Governor no. : 0 421 801 206

Customer-spec. information
 Customer : MAN

Engine : D2566MK279

1st version kW : 206.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 18.7...18.9
 100 s: (18.4...19.2)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.3...6.5
 Del.quantity cm³/ : 1.1...1.7
 100 s: (0.8...2.0)

Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2

Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del.quantity : 187.0...189.0
 1000 : (184.0...192.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 9.70

Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.4

Testing:

Speed rpm : 100
Minimum rack travel: 7.90
Speed rpm : 250
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 12.00...12.20
2nd speed rpm : 1050
Rack travel in m: 10.60...10.80
3rd speed rpm : 870
Rack travel in m: 11.60...11.80
4th speed rpm : 935
Rack travel in m: 10.90...11.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.80...11.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 310
Rack travel in m: 10.50...10.60
3rd pressure hPa : 440
Rack travel in m: 11.20...11.60

START CUT-OUT

Speed 1/min : 190 (210)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000

Speed rpm : 1050
Del.quantity cm3/ : 167.0...173.0
1000 s: (164.0...176.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 178.0...184.0
1000 s: (175.0...187.0)
Aneroid pressure h: 310
Speed rpm : 500
Del.quantity cm3/ : 139.0...145.0
1000 s: (136.0...148.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 113.0...115.0
1000 s: (110.0...118.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 11.0...17.0
1000 s: (8.0...20.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7238

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 k 1
 Edition : 21.06.91
 Replaces : 1.2.91
 Test oil : ISO-4113
 Combination no. : 0 402 046 342
 Injection pump
 Pump designation : PES6P120A32ORS525-1
 EP type number : 0 412 026 059
 Governor
 Governor design. : RQV275...1100PA984
 Governor no. : 0 421 813 904

Customer-spec. information
 Customer : RVI

Engine : MIDR 06 20 45

1st version kW : 202.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.70...10.80

Del.quantity cm³/ : 16.8...17.0

100 s: (16.5...17.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.6...6.0

Del.quantity cm³/ : 1.5...2.1

100 s: (1.2...2.4)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1145
 travel mm : 8.40...8.60

2nd speed rpm : 275
 travel mm : 0.80...1.20

3rd speed rpm : 500
 travel mm : 3.50...4.10

4th speed rpm : 850
 travel mm : 5.90...6.30

5th speed rpm : 1450
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1125

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 168.0...170.0
1000 : (165.0...173.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 298...306

Testing:
1st rack travel in: 9.70
Speed rpm : 1180...1190
2nd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 242...250

Testing:
Speed rpm : 200
Minimum rack travel: 7.50
Speed rpm : 275
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION
Speed rpm : 320...440

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.20...9.40
2nd pressure hPa : 220
Rack travel in m: 10.10...10.20
3rd pressure hPa : 195
Rack travel in m: 9.50...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700

Del.quantity cm3/ : 155.0...161.0
1000 s: (152.0...164.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 103.0...105.0
1000 s: (100.0...108.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.70
Speed rpm : 1180...1190

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...150.0
1000 s: (120.0...150.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.60...6.00
Del.quantity cm3/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 7,7 b
Edition : 05.07.91
Replaces : 19.3.91
Test oil : ISO-4113

Combination no. : 0 402 046 343

Injection pump
Pump designation : PES6P120A72ORS3275
EP type number : 0 412 026 745
Governor
Governor design. : RQV300...1100PA954-1
K

Governer no. : 0 421 815 273

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8360.46.016

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 105

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.80...12.90

Del.quantity cm³/ : 21.8...22.0

100 s: (21.5...22.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.2...4.6

Del.quantity cm³/ : 2.0...2.6

100 s: (1.7...2.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1145

travel mm : 10.60...10.80

2nd speed rpm : 300

travel mm : 1.00...1.40

3rd speed rpm : 850

travel mm : 6.60...7.00

4th speed rpm : 1350

travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 1500

Del.quantity : 218.0...220.0

1000 : (215.0...223.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 11.40
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 65...73

Testing:
Speed rpm : 100
Minimum rack trave: 5.90
Speed rpm : 300
Rack travel in mm : 4.30...4.50

CONSTANT REGULATION
Speed rpm : 340...450

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 12.80...12.90
2nd speed rpm : 1100
Rack travel in m: 12.30...12.50
3rd speed rpm : 750
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 900
Pressure hPa : 1500
Rack travel mm : 12.80...12.90

Measurement
Speed 1/min : 900

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 600
Rack travel in m: 11.70...11.80
3rd pressure hPa : 420
Rack travel in m: 9.40...9.80

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1500
Speed rpm : 1100
Del.quantity cm3/ : 203.0...209.0
1000 s: (200.0...212.0)
Aneroid pressure h: 1500
Speed rpm : 750
Del.quantity cm3/ : 202.0...208.0
1000 s: (199.0...211.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 102.0...104.0
1000 s: (99.0...107.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.40
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...150.0
1000 s: (116.0...154.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.20...4.60
Del.quantity cm3/ : 20.0...26.0
1000 s: (17.0...29.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 12,0 f1
 Edition : 21.06.91
 Replaces : 27.2.91
 Test oil : ISO-4113

Combination no. : 0 402 046 758

Injection pump
 Pump designation : PES6P120A320RS3139
 EP type number : 0 412 026 718
 Governor
 Governor design. : RQV275...950PA728-1
 Governor no. : 0 421 813 465

Customer-spec. information
 Customer : RVI

Engine : MIDR 063540

1st version kW : 243.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 12.50...12.60

 Del.quantity cm³/ : 19.7...19.9
 100 s: (19.4...20.2)

 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 5.20...5.60
 Del.quantity cm³/ : 2.2...2.6
 100 s: (1.9...2.9)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
 travel mm : 1.30...1.70
 2nd speed rpm : 450
 travel mm : 3.30...3.70
 3rd speed rpm : 800
 travel mm : 5.60...6.00
 4th speed rpm : 950
 travel mm : 6.70...6.90

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1125
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1000
 Del.quantity : 197.0...199.0
 1000 : (194.0...202.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:
1st rack travel in: 11.50
Speed rpm : 1020...1030
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 200
Minimum rack travel: 7.10
Speed rpm : 275
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION
Speed rpm : 300...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 12.50...12.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.30
2nd pressure hPa : 520
Rack travel in m: 11.80...11.90
3rd pressure hPa : 200
Rack travel in m: 10.10...10.40

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 950
Del.quantity cm3/ : 198.0...204.0
1000 s: (195.0...207.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 115.0...117.0
1000 s: (112.0...120.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 1020...1030

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 155.0...185.0
1000 s: (151.0...189.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.20...5.60
Del.quantity cm3/ : 22.0...26.0
1000 s: (19.0...29.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery mark 9° cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 a18
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 773A
 Injection pump
 Pump designation : PES6P110A820LS3131
 EP type number : 0 412 016 715
 Governor
 Governor design. : RQ300/1100PA800
 Governor no. : 0 421 801 347

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM427H

1st version kW : 177.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 11.00...11.10
 Del.quantity cm3/ : 13.9...14.1
 100 s: (13.6...14.3)
 Spread cm3 : 0.4
 100 s: (0.8)

2nd speed rpm : 300.0
 Rack travel in mm : 7.2...7.4
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.3)
 Spread cm3 : 0.4
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 600
 Rack travel in mm : 12.50...13.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 139.0...141.0
 1000 : (136.5...143.5)
 Spread cm3 : 4.00
 1000 : (8.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 13.0

Testing:
 1st rack travel in: 10.00
 Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 100
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 380...420

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 116.0...119.0
1000 s: (113.0...122.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 a19
Edition : 26.07.91
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 046 7738
Injection pump
Pump designation : PES6P110A820LS3131
EP type number : 0 412 016 715
Governor
Governor design. : RQ300/1100PA800
Governor no. : 0 421 801 347

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM427H

1st version kW : 177.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
: (4.25...4.45)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100
Rack travel in mm : 11.00...11.10
Del.quantity cm3/ : 13.9...14.1
100 s: (13.6...14.3)
Spread cm3 : 0.4
100 s: (0.8)

2nd speed rpm : 300.0
Rack travel in mm : 7.2...7.4
Del.quantity cm3/ : 1.4...2.0
100 s: (1.1...2.3)
Spread cm3 : 0.4
100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 600
Rack travel in mm : 12.50...13.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 139.0...141.0
1000 : (136.5...143.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 13.0

Testing:
1st rack travel in: 10.00
Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 100
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 380...420

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 116.0...119.0
1000 s: (113.0...122.0)
Spread cm³ : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ROL 12,2 i1
Edition : 26.07.91
Replaces : 9.10.87
Test oil : ISO-4113
Combination no. : 0 402 046 779
Injection pump
Pump designation : PES6P120A320RS3170-1
EP type number : 0 412 026 726
Governor
Governor design. : RQ750PA826-1
Governor no. : 0 421 801 366

Customer-spec. information
Customer : PERKINS

Engine : EAGLE LE

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder assembly : 1 688 901 019
Opening pressure, bar : 207...210
Orifice plate diameter mm : 0,8
Test lines : 1 680 750 075
Outside diameter x Wall thickness x Length mm : 8.00X2.50X1000
(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 2- 6- 3- 5

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
Rack travel in mm : 13.10...13.20
Del.quantity cm3/ : 21.2...21.4
100 s: (20.9...21.7)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 250.0
Rack travel in mm : 5.9...6.1
Del.quantity cm3/ : 1.7...2.3
100 s: (1.4...2.6)
Spread cm3 : 0.8
100 s: (1.2)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 212.0...214.0
1000 : (209.0...217.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 26...34

Testing:
1st rack travel in: 12.10
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 776...791
4th rack travel in: 900
Speed rpm : 0.00...1.00

START CUT-OFF

Speed 1/min : 690 (0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

APPLICATION

Generator



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 r
 Edition : 05.07.91
 Replaces : 31.3.89
 Test oil : ISO-4113

Combination no. : 0 402 046 804

Injection pump
 Pump designation : PES6P110A720LS3222
 EP type number : 0 412 016 725
 Governor
 Governor design. : RQ350/1100PA655-1
 Governor no. : 0 421 801 475

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447h

1st version kW : 132.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 8.80...8.90

Del.quantity cm³/ : 10.3...10.5

100 s: (10.0...10.7)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 5.9...6.5

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm³ : 0.4

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 103.0...105.0

1000 : (100.5...107.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 13.5

Testing:

1st rack travel in: 7.80

Speed rpm : 1095...1110

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.2

Testing:
Speed rpm : 200
Minimum rack trave: 8.50
Speed rpm : 350
Rack travel in mm : 5.90...6.50
Rack travel in mm : 2.00
Speed rpm : 400...440

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 8.80...8.90
2nd speed rpm : 800
Rack travel in m: 9.30...9.50
3rd speed rpm : 600
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 94.0...98.0
1000 s: (91.0...101.0)
Spread cm³ : 6.00
1000 s: (9.00)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 7,7 a
 Edition : 26.07.91
 Replaces : 17.9.90
 Test oil : ISO-4113

Combination no. : 0 402 046 815

Injection pump
 Pump designation : PES6P120A72ORS3249
 EP type number : 0 412 026 737
 Governor
 Governor design. : RQV300...1100PA954K
 Governor no. : 0 421 815 243

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8360.46.417

1st version kW : 196.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 105

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 008

Outside diameter x wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.50...12.60

Del. quantity cm³/ : 21.1...21.3
 100 s: (20.8...21.6)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.0...4.4
 Del. quantity cm³/ : 2.0...2.6
 100 s: (1.7...2.9)

Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1160
 travel mm : 10.60...10.80

2nd speed rpm : 300
 travel mm : 1.00...1.40

3rd speed rpm : 850
 travel mm : 6.60...7.00

4th speed rpm : 1350
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 1500
 Del. quantity : 211.0...213.0
 1000 : (208.0...216.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control Lever
position degrees: 117...125

Testing:
1st rack travel in: 11.60
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: ?

Testing:
Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 300
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 330...390

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.50...12.60
2nd speed rpm : 700
Rack travel in m: 11.40...11.70
3rd speed rpm : 300
Rack travel in m: 9.00...9.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1100
Pressure hPa : 1500
Rack travel mm : 13.60...13.70

Measurement
Speed 1/min : 1100

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 810
Rack travel in m: 12.40...12.50
3rd pressure hPa : 430
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1500
Speed rpm : 700
Del.quantity cm³/ : 182.0...188.0
1000 s: (179.0...191.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 96.0...98.0
1000 s: (93.0...101.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.60
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.00...4.40
Del.quantity cm³/ : 20.0...26.0
1000 s: (17.0...29.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 9,5 h
 Edition : 26.07.91
 Replaces : 1.3.91
 Test oil : ISO-4113

Combination no. : 0 402 046 821

Injection pump
 Pump designation : PES6P120A72ORS3273
 EP type number : 0 412 026 746
 Governor
 Governor design. : RQV450...11COPA989
 Governor no. : 0 421 813 918

Customer-spec. information
 Customer : IVECO-UNIC

Engine : 8465.21.004

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.90...10.00

Del.quantity cm³/ : 15.5...15.7
 100 s: (15.2...16.0)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 400.0
 Rack travel in mm : 4.8...5.2
 Del.quantity cm³/ : 2.0...2.6
 100 s: (1.7...2.9)

Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1145
 travel mm : 7.90...8.10

2nd speed rpm : 450
 travel mm : 0.70...1.10

3rd speed rpm : 650
 travel mm : 3.90...4.50

4th speed rpm : 950
 travel mm : 6.60...7.00

5th speed rpm : 1500
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1180
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 155.0...157.0
 1000 : (152.0...160.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 8.90
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 64...72

Testing:
Speed rpm : 100
Minimum rack trave: 6.50
Speed rpm : 400
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 450...580

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.90
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 125.0...145.0
1000 s: (121.0...149.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 4.80...5.20

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 p
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 824
 Injection pump
 Pump designation : PES6P120A320RS3279
 EP type number : 0 412 026 748
 Governor
 Governor design. : RQ275/1050PA999-1
 Governor no. : 0 421 801 586

Customer-spec. information
 Customer : RVI

Engine : MIHR 062045 A/3
 1st version kW : 191.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test Lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 11.20...11.30
 Del.quantity cm3/ : 13.7...13.9
 100 s: (13.4...14.2)
 Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 5.4...5.8
 Del.quantity cm3/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1000
 Del.quantity : 137.0...139.0
 1000 : (134.0...142.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 10.20
 Speed rpm : 1130...1145
 2nd rack travel in: 4.00

Speed rpm : 1215...1245
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 275
Rack travel in mm : 5.6

Testing:

Speed rpm : 200
Minimum rack trave: 6.40
Speed rpm : 275
Rack travel in mm : 5.50...5.70

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 0.40...0.50
2nd speed rpm : 1050
Rack travel in m: 0.30...0.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 240
Rack travel in m: 10.70...10.80
3rd pressure hPa : 140
Rack travel in m: 9.90...10.10

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050
Del.quantity cm³/ : 122.0...128.0
1000 s: (119.0...131.0)
Aneroid pressure h: 1
Speed rpm : 500
Del.quantity cm³/ : 107.0...109.0
1000 s: (104.0...112.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1130...1145

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 185.0...205.0
1000 s: (181.0...209.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.40...5.80
Del.quantity cm³/ : 16.0...22.0
1000 s: (13.0...25.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 j 2
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 825
 Injection pump
 Pump designation : PES6P110A720LS3282
 EP type number : 0 412 016 736
 Governor
 Governor design. : RQ300/1100PA800-2
 Governor no. : 0 421 801 593

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 h

1st version kW : 157.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.90...11.00

Del.quantity cm³/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.4

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.4

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 136.0...138.0

1000 : (133.5...140.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 13.5

Testing:

1st rack travel in: 9.90

Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 200
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 370...410

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 113.0...116.0
1000 s: (110.0...119.0)
Spread cm3 : 5.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.90
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 j 3
 Edition : 05.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 826
 Injection pump
 Pump designation : PES6P110A720LS3282
 EP type number : 0 412 016 736
 Governor
 Governor design. : RQ300/1100PA786-2
 Governor no. : 0 421 801 576

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 h

1st version kW : 157.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.00...13.10

Del.quantity cm³/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0
 Rack travel in mm : 7.2...7.4
 Del.quantity cm³/ : 1.4...2.0
 100 s: (1.1...2.3)

Spread cm³ : 0.4
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 600
 Rack travel in mm : 13.50...14.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 136.0...138.0
 1000 : (133.5...140.5)
 Spread cm³ : 4.00
 1000 : (8.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 14.0

Testing:
 1st rack travel in: 12.00
 Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1250
Speed rpm : 0.00...2.40

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 200
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 370...410

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 113.0...116.0
1000 s: (110.0...119.0)
Spread cm3 : 5.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 a
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 827
 Injection pump
 Pump designation : PES6P120A32ORS3284
 EP type number : 0 412 026 749
 Governor
 Governor design. : RQ275/1050PA999-3
 Governor no. : 0 421 801 598

Customer-spec. information
 Customer : RVI

Engine : MIDR/PR 062045

1st version kW : 186.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 9.90...10.00
 Del.quantity cm³/ : 14.3...14.5
 100 s: (14.0...14.8)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 4.3...4.7
 Del.quantity cm³/ : 1.5...2.1
 100 s: (1.2...2.4)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1000
 Del.quantity : 143.0...145.0
 1000 : (140.0...148.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 8.90
 Speed rpm : 1130...1145
 2nd rack travel in: 4.00

Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 275
Rack travel in mm : 5.4

Testing:

Speed rpm : 200
Minimum rack trave: 6.20
Speed rpm : 275
Rack travel in mm : 4.40...4.60

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 0.40...0.50
2nd speed rpm : 1050
Rack travel in m: 0.30...0.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 9.90...10.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...8.90
2nd pressure hPa : 200
Rack travel in m: 9.40...9.50
3rd pressure hPa : 140
Rack travel in m: 9.00...9.20

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050
Del.quantity cm³/ : 140.0...146.0
1000 s: (137.0...149.0)

Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 100.0...102.0
1000 s: (97.0...105.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 1130...1145

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 145.0...175.0
1000 s: (141.0...179.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.30...4.70
Del.quantity cm³/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 j 4
Edition : 02.08.91
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 046 831
Injection pump
Pump designation : PES6P110A720LS3282
EP type number : 0 412 016 736
Governor
Governor design. : RQ300/1100PA1015
Governor no. : 0 421 801 613

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM447 h

1st version kW : 157.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
: (4.35...4.55)
Rack travel in mm : 19.00...21.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.4

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 600

Rack travel in mm : 13.50...14.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 136.0...138.0

1000 : (133.5...140.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 14.0

Testing:

1st rack travel in: 12.00

Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1250
Speed rpm : 0.00...2.40

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 200
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 370...410

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 113.0...116.0
1000 s: (110.0...119.0)
Spread cm³ : 5.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 10,1 h
Edition : 31.07.91
Replaces : 24.8.89
Test oil : ISO-4113

Combination no. : 0 402 076 029

Injection pump
Pump designation : PES6P110A72ORS337
EP type number : 0 412 016 044
Governor
Governor design. : RSV400...1050PO/416D
R
Governor no. : 0 421 835 074

Customer-spec. information
Customer : JOHN DEERE

Engine : 6619 T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...43

Overflow valve : 1 457 413 010

Inlet press., bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 9 681 230 706

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,75...2,85
: (2,70...2,90)
Rack travel in mm : 9,00...12,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10,20

Del. quantity cm³/ : 13,5...13,7
100 s : (-)

Spread cm³ : 0,4
100 s : (-)

2nd speed rpm : 400
Rack travel in mm : 6,00
Del. quantity cm³/ : 2,1...2,7
100 s : (-)

Spread cm³ : 0,4
100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,30...0,70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Aneroid pressure h : 800
Del. quantity : 135,0...137,0
1000 : (-)
Spread cm³ : 4,0
1000 : (-)

RATED SPEED

1st version
Control lever
position degrees: 35...43

Testing:
1st rack travel in: 9,20
Speed rpm : 1095...1105
2nd rack travel in: 9,20
Speed rpm : 1090...1110

LOW IDLE 1
Control lever

position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 400
Rack travel in mm : 5,90...6,10
Rack travel in mm : 2,00
Speed rpm : 520...580

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10,20
2nd speed rpm : 630
Rack travel in m: 10,70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 246,5
Rack travel mm : 9,85...9,95

Measurement

Speed 1/min : 500
1st pressure hPa : 373,2
Rack travel in m: 10,30...10,50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800
Speed rpm : 630
Del.quantity cm³/ : 145,0...149,0
1000 s: (-)
Spread cm³ : 6,0
1000 s: (-)
Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 113,6...121,6
1000 s: (-)
Spread cm³ : 6,0
1000 s: (-)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9,20

Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : <190,0
1000 s: (-)
Rack travel in mm : 19,00...21,00

HIGH IDLE

1st version

Aneroid pressure h: 800
Speed rpm : 1150
Rack travel in mm : 6,20
Del.quantity cm³/ : 45,0...55,0
1000 s: (-)
Spread cm³ : 6,0
1000 s: (-)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6,00
Del.quantity cm³/ : 20,8...26,8
1000 s: (-)

Remarks:

Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10.50 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 g
 Edition : 18.06.91
 Replaces : 15.11.90
 Test oil : ISO-4113
 Combination no. : 0 402 076 733
 Injection pump
 Pump designation : PES6P11QA72ORS3224
 EP type number : 0 412 016 726
 Governor
 Governor design. : RSV475...1050P2A534-
 5
 Governor no. : 0 421 833 313

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6101 AT 001

1st version kW : 170.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X3.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

Prestroke mm : 3.35...3.45
 : (3.30...3.50)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 13.20...13.30

Del.quantity cm³/ : 15.8...16.0

100 s: (15.6...16.2)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 475.0

Rack travel in mm : 6.9...7.3

Del.quantity cm³/ : 1.7...2.1

100 s: (1.5...2.4)

Spread cm³ : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 600

Del.quantity : 158.0...160.0

1000 : (156.0...162.0)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 37...45

Testing:

1st rack travel in: 12.20
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1145...1155
3rd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 475
Rack travel in mm : 4.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 475
Rack travel in mm : 4.60...4.80

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 13.20...13.30
2nd speed rpm : 600
Rack travel in m: 13.90...14.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 600
Rack travel mm : 13.90...14.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.60...11.80
2nd pressure hPa : 300
Rack travel in m: 13.40...13.50
3rd pressure hPa : 160
Rack travel in m: 12.00...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 600
Del.quantity cm3/ : 177.0...181.0
1000 s: (175.0...183.0)
Aneroid pressure h: -
Speed rpm : 500

B20

Del.quantity cm3/ : 131.0...135.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.20
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 125.0...145.0
1000 s: (120.0...150.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 475
Rack travel in mm : 4.60...4.80

Remarks:

: JOHN DEERE # RE39856

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 d 5
 Edition : 05.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 076 734A
 Injection pump
 Pump designation : PES6P110A820LS3131-1
 EP type number : 0 412 016 717
 Governor
 Governor design. : RSV350...1100POA487
 -9
 Governor no. : 0 421 833 316

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 C

1st version kW : 165.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 11.30...11.40

Del.quantity cm3/ : 14.1...14.3

100 s: (13.8...14.5)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 350.0
 Rack travel in mm : 6.8...7.0
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.3)

Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1030
 Del.quantity : 141.0...143.0
 1000 : (138.5...145.5)
 Spread cm3 : 4.00
 1000 : (8.00)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:

1st rack travel in: 10.30
Speed rpm : 1080...1090
2nd rack travel in: 4.00
Speed rpm : 1142...1160
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 69...77
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.9

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 400...440

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 11.30...11.40
2nd speed rpm : 850
Rack travel in m: 11.70...11.90
3rd speed rpm : 700
Rack travel in m: 12.30...12.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 143.0...144.0
1000 s: (140.0...147.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1080...1090

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.80...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 4.50
1000 s: (7.00)

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PER 16,3 b
 Edition : 26.07.91
 Replaces : 19.3.91
 Test oil : ISO-4113

Combination no. : 0 402 638 803

Injection pump
 Pump designation : PE8P120A12ORS7141
 EP type number : 0 412 628 823
 Governor
 Governor design. : RQ750PA871
 Governor no. : 0 421 801 404

Customer-spec. information
 Customer : PERKINS

Engine : CV8-320 G

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 6- 5- 4- 8-
 7- 2

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.40...14.50

Del.quantity cm³/ : 33.3...33.5
 100 s: (33.0...33.8)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 7.5...7.7
 Del.quantity cm³/ : 3.6...4.2
 100 s: (3.3...4.5)

Spread cm³ : 0.8
 100 s: (1.2)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 333.0...335.0
 1000 : (330.0...338.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Control lever
 position degrees: 77...85

Testing:
 1st rack travel in: 13.40
 Speed rpm : 750...755

2nd rack travel in: 4.00
 Speed rpm : 783...798

4th rack travel in: 900
 Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.40
Speed rpm : 750...755

Remarks:

APPLICATION :

Generator



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PER 16,3 d
 Edition : 26.07.91
 Replaces : 22.3.91
 Test oil : ISO-4113
 Combination no. : 0 402 638 805
 Injection pump
 Pump designation : PE8P120A12ORS7199
 EP type number : 0 412 628 843
 Governor
 Governor design. : RQ750PA871
 Governor no. : 0 421 801 404

Customer-spec. information
 Customer : PERKINS (RR)

Engine : CV8-360 G

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Orifice plate diameter mm : 0,8
 Test lines : 1 680 750 075
 Outside diameter x Wall thickness x Length mm : 8.00X2.50X1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00

B25

Firing order : 1- 3- 6- 5- 4- 8-
 7- 2

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 13.00...13.10
 Del.quantity cm3/ : 36.2...36.4
 100 s: (35.9...36.7)
 Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.9...5.1
 Del.quantity cm3/ : 3.6...4.2
 100 s: (3.3...4.5)
 Spread cm3 : 0.8
 100 s: (1.2)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 362.0...364.0
 1000 : (359.0...367.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Control lever position degrees: 87...95

Testing:
 1st rack travel in: 12.00
 Speed rpm : 750...755
 2nd rack travel in: 4.00
 Speed rpm : 773...788
 4th rack travel in: 900
 Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 750...755

Remarks:

APPLICATION :

Generator



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 22,0 c 1
 Edition : 21.06.91
 Replaces : 3.6.91
 Test oil : ISO-4113
 Combination no. : 0 402 640 827
 Injection pump
 Pump designation : PE12P120A520LS7826
 EP type number : 0 412 620 817
 Governor
 Governor design. : RQV350...1000PA870
 -12
 Governor no. : 0 421 813 933
 Customer-spec. information
 Customer : MERCEDES-BENZ
 Engine : OM 444 LA
 1st version kw : 550.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 150...170
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7
 Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 13.00...13.10
 Del. quantity cm³/ : 24.2...24.4
 100 s: (23.9...24.7)
 Spread cm³ : 0.6
 100 s: (1.0)
 2nd speed rpm : 350.0
 Rack travel in mm : 5.3...5.9
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.30...1.80
 2nd speed rpm : 740
 travel mm : 4.80...5.30
 3rd speed rpm : 1058
 travel mm : 8.30...8.80
 4th speed rpm : 1260
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1125
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 1600
Del. quantity : 242.0...244.0
1000 : (239.0...247.0)
Spread cm³ : 6.00
1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 12.00
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 250
Minimum rack travel: 7.30
Speed rpm : 350
Rack travel in mm : 5.30...5.90

CONSTANT REGULATION
Speed rpm : 350...600

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 8.20...8.50

Measurement
Speed 1/min : 500

1st pressure hPa : 400
Rack travel in m: 9.40...9.60
2nd pressure hPa : 700
Rack travel in m: 11.00...11.20

START CUT-OUT

Speed 1/min : 310 (330)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1600
Speed rpm : 750
Del. quantity cm³/ : 233.0...238.0
1000 s: (230.0...241.0)
Spread cm³ : 10.00
1000 s: (15.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 124.0...126.0
1000 s: (121.0...129.0)
Spread cm³ : 10.00
1000 s: (15.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 330.0...350.0
1000 s: (326.0...354.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 22,0 c 2
 Edition : 21.06.91
 Replaces : 3.6.91
 Test oil : ISO-4113

 Combination no. : 0 402 640 828

 Injection pump
 Pump designation : PE12P120A520LS7826
 EP type number : 0 412 620 817
 Governor
 Governor design. : RQV350...1050PA870
 -13
 Governor no. : 0 421 813 934

 Customer-spec. information
 Customer : MERCEDES-BENZ

 Engine : OM 444 LA

 1st version kW : 620.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve
 : 1 417 413 025

 Inlet press., bar : 1.50

 Overflow
 quantity min. 1/h: 150...170

 Test nozzle holder
 assembly : 1 688 901 019

 Opening
 pressure, bar : 207...210

 Orifice plate
 diameter mm : 0,8

 Test lines : 1 680 750 067

 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

 Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

 Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345
 Tolerance + - ° : 0.50 (0.75)

 Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1050

 Rack travel in mm : 14.30...14.40

 Del. quantity cm³/ : 28.0...28.2

 100 s: (27.7...28.5)

 Spread cm³ : 0.6

 100 s: (1.0)

 2nd speed rpm : 350.0
 Rack travel in mm : 5.3...5.9
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.30...1.80
 2nd speed rpm : 570
 travel mm : 3.30...3.80
 3rd speed rpm : 900
 travel mm : 5.40...5.90
 4th speed rpm : 1107
 travel mm : 7.80...8.30
 5th speed rpm : 1204
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1175
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050
Aneroid pressure h: 1800
Del. quantity : 280.0...282.0
1000 : (277.0...285.0)
Spread cm³ : 6.00
1000 : (10.00)

RATED SPEED

1st version

Control lever
position degrees: 114...122

Testing:

1st rack travel in: 13.30
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 59...67

Testing:

Speed rpm : 250
Minimum rack trave: 7.30
Speed rpm : 350
Rack travel in mm : 5.30...5.90

CONSTANT REGULATION

Speed rpm : 350...600

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : -
Rack travel mm : 8.20...8.50

Measurement

Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 9.60...9.70
2nd pressure hPa : 1100
Rack travel in m: 13.80...14.10

START CUT-OUT

Speed 1/min : 310 (330)

CO2

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1800
Speed rpm : 750
Del. quantity cm³/ : 278.0...282.0
1000 s: (275.0...285.0)
Spread cm³ : 10.00
1000 s: (15.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 124.0...126.0
1000 s: (121.0...129.0)
Spread cm³ : 10.00
1000 s: (15.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.30
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 330.0...350.0
1000 s: (326.0...354.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 22,0 c 3
 Edition : 21.06.91
 Replaces : 3.6.91
 Test oil : ISO-4113

Combination no. : 0 402 640 829

Injection pump
 Pump designation : PE12P120A520LS7826
 EP type number : 0 412 620 817
 Governor
 Governor design. : RGV350...900PA870-14
 Governor no. : 0 421 813 935

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 444 LA

1st version kW : 500.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 150...170

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 23.6...23.8

100 s: (23.3...24.1)

Spread cm³ : 0.6

100 s: (1.0)

2nd speed rpm : 350.0

Rack travel in mm : 5.3...5.9

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.30...1.80

2nd speed rpm : 655
 travel mm : 4.80...5.30

3rd speed rpm : 960
 travel mm : 8.70...9.20

4th speed rpm : 1120
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-Lever position
 Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h: 1600
Del.quantity : 236.0...238.0
1000 : (233.0...241.0)
Spread cm³ : 6.00
1000 : (10.00)

RATED SPEED

1st version
Control Lever
position degrees: 118...126

Testing:

1st rack travel in: 11.90
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 1010...1040
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 62...70

Testing:

Speed rpm : 250
Minimum rack travel: 7.30
Speed rpm : 350
Rack travel in mm : 5.30...5.90

CONSTANT REGULATION

Speed rpm : 350...600

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 8.20...8.50

Measurement

Speed 1/min : 500

1st pressure hPa : 400
Rack travel in m: 9.40...9.60
2nd pressure hPa : 700
Rack travel in m: 11.00...11.20

START CUT-OUT

Speed 1/min : 310 (330)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1600
Speed rpm : 750
Del.quantity cm³/ : 228.0...232.0
1000 s: (225.0...235.0)
Spread cm³ : 10.00
1000 s: (15.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 124.0...126.0
1000 s: (121.0...129.0)
Spread cm³ : 10.00
1000 s: (15.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 330.0...350.0
1000 s: (326.0...354.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 21,0 b3
 Edition : 21.06.91
 Replaces : 27.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 640 830
 Injection pump
 Pump designation : PE12P120A520LS7824-2
 EP type number : 0 412 620 816
 Governor
 Governor design. : RQV300...1150PA902-4
 Governor no. : 0 421 813 870

Customer-spec. information
 Customer : MAN

Engine : D2842LYE

1st version kW : 735.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-

Phasing : 345
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.60...13.70

Del. quantity cm³/ : 30.1...30.3

100 s: (29.8...30.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 500

Rack travel in mm : 9.1...9.3

Del. quantity cm³/ : 14.9...15.1

100 s: (14.6...15.4)

Spread cm³ : 0.8

100 s: (1.2)

3rd speed rpm : 300

Rack travel in mm : 7.20...7.40

Del. quantity cm³/ : 5.2...6.0 *

100 s: (-)

Spread cm³ : -

100 s: (-)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.60

2nd speed rpm : 450
 travel mm : 2.90...3.50

3rd speed rpm : 750
 travel mm : 5.60...6.00

4th speed rpm : 1150
 travel mm : 9.50...9.70

5th speed rpm : 1400
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1200
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h: 1300
Del.quantity : 301.0...303.0
1000 : (298.0...306.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.60
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 79...87

Testing:
Speed rpm : 100
Minimum rack trave: 8.90
Speed rpm : 300
Rack travel in mm : 7.30...7.50
Rack travel in mm : 2.00
Speed rpm : 470...530

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1300
Rack travel mm : 13.60...13.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.10...9.30
2nd pressure hPa : 100
Rack travel in m: 9.50...9.60
3rd pressure hPa : 470
Rack travel in m: 12.40...12.80

START CUT-OUT

CO6

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0 *
1000 s: (-)

Speed rpm : 100
Del.quantity cm3/ : - **
1000 s: (-)
Rack travel in mm : 17.5...21.0

HIGH IDLE

1st version
Aneroid pressure h: -
Speed rpm : 500
Rack travel in mm : <7.00
Del.quantity cm3/ : - **
1000 s: (-)

2nd version
Aneroid pressure h: -
Speed rpm : 500
Rack travel in mm : < 7.50
Del.quantity cm3/ : < 50.0
1000 s: (-)

3rd version
Aneroid pressure h: -
Speed rpm : 500
Rack travel in mm : 8.40...8.60
Del.quantity cm3/ : 125.0...200.0
1000 s: (-)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.40
Del.quantity cm³/ : 52.0...60.0 *
1000 s: (-)

Remarks:

: MAN-NR. 2-7153

* applies to cylinders 4, 5, 6, 8, 10
and 12

** applies for cylinders 1, 2, 3, 7, 9
and 11

APPLICATION

Ship

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 21,0 f1
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 640 832
 Injection pump
 Pump designation : PE12P120A520LS7824-3
 EP type number : 0 412 620 829
 Governor
 Governor design. : RGV300...1050PA977-1
 K
 Governor no. : 0 421 815 282

Customer spec. information
 Customer : MAN

Engine : D2842LE

1st version kW : 530.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

C08

Prestroke mm : 4.50...4.60
 : (4.45...4.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 Phasing : 180-225-240-285-300-
 345
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1050
 Rack travel in mm : 12.10...12.20
 Del. quantity cm3/ : 24.9...25.1
 100 s: (24.6...25.4)
 Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.8...5.2
 Del. quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm3 : 0.8
 100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1095
 travel mm : 10.10...10.30
 2nd speed rpm : 300
 travel mm : 1.00...1.20
 3rd speed rpm : 550
 travel mm : 3.50...4.10
 4th speed rpm : 900
 travel mm : 7.40...7.80
 5th speed rpm : 1350
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Aneroid pressure h: 1300
Del. quantity : 249.0...251.0
1000 : (246.0...254.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control Lever
position degrees: 295...303

Testing:
1st rack travel in: 11.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 245...253

Testing:
Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 330...450

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 12.10...12.20
2nd speed rpm : 700
Rack travel in m: 11.10...11.30
3rd speed rpm : 900
Rack travel in m: 11.50...11.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1050
Pressure hPa : 1300
Rack travel mm : 12.10...12.20

Measurement
Speed 1/min : 1050

1st pressure hPa : -
Rack travel in m: 8.80...9.00

009

2nd pressure hPa : 250
Rack travel in m: 9.20...9.30

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1300
Speed rpm : 900
Del. quantity cm³/ : 237.0...243.0
1000 s: (234.0...246.0)
Aneroid pressure h: 1300
Speed rpm : 700
Del. quantity cm³/ : 222.0...228.0
1000 s: (219.0...231.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 255.0...275.0
1000 s: (251.0...279.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.20
Del. quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7149

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 12
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SAC 20,0 a
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 640 834
 Injection pump
 Pump designation : PE12P130A52ORS7226-1
 EP type number : 0 412 630 803
 Governor
 Governor design. : RQV300...930PA1005
 Governor no. : 0 421 813 939

Customer-spec. information
 Customer : SACM

Engine : UD23.V12

1st version kW : 971.0
 Rated speed : 1860

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 5- 10- 3- 7-
 : 6- 11- 2- 9- 4- 12

Phasing : 0-15-60-75-120-135-
 : 180-195-240-255-300-
 Phasing : 315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 930
 Rack travel in mm : 11.50...11.60
 Del. quantity cm³/ : 37.4...37.7
 100 s : (37.0...38.0)
 Spread cm³ : 0.6
 100 s : (1.0)

2nd speed rpm : 300.0
 Rack travel in mm : 4.6...5.0
 Del. quantity cm³/ : 3.2...3.8
 100 s : (3.2...3.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 975
 travel mm : 8.40...8.60
 2nd speed rpm : 300
 travel mm : 1.50...1.90
 3rd speed rpm : 600
 travel mm : 4.30...4.70
 4th speed rpm : 1200
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 960
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 930
 Del. quantity : 374.0...377.0
 1000 : (370.5...380.5)

Spread cm³ : 6.00
1000 : (10.00)

APPLICATION

Navy

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 10.50
Speed rpm : 970...980
2nd rack travel in: 4.00
Speed rpm : 1025...1055
4th rack travel in: 1150
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 65...73

Testing:
Speed rpm : 200
Minimum rack travel: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90

CONSTANT REGULATION
Speed rpm : 300...420

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 930
Rack travel in m: 10.50...10.60
2nd speed rpm : 600
Rack travel in m: 10.50...10.70

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.50
Speed rpm : 970...980

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.60...5.00
Del.quantity cm³/ : 32.0...38.0
1000 s: (32.0...38.0)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 21,9 x 3
Edition : 28.06.91
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 640 835

Injection pump
Pump designation : PE12P120A320LS7807-4
EP type number : 0 412 620 830
Governor
Governor design. : RGV350...900PA870-15
Governor no. : 0 421 813 944

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 444 A

1st version kW : 375.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Rack travel in mm : 9.00...12.00
Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.60...12.70

Del.quantity cm³/ : 18.7...18.9

100 s: (18.4...19.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0
Rack travel in mm : 5.2...5.8
Del.quantity cm³/ : 1.6...2.2
100 s: (1.3...2.5)

Spread cm³ : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
travel mm : 1.30...1.80
2nd speed rpm : 655
travel mm : 4.80...5.30
3rd speed rpm : 960
travel mm : 8.70...9.20
4th speed rpm : 1120
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1025
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h: 1100
Del.quantity : 187.0...189.0
1000 : (184.0...192.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 107...115

Testing:
1st rack travel in: 11.60
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 1010...1040
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 62...70

Testing:
Speed rpm : 250
Minimum rack travel: 6.80
Speed rpm : 350
Rack travel in mm : 5.20...5.80

CONSTANT REGULATION

Speed rpm : 400...600

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : -
Rack travel mm : 10.40...10.60

Measurement
Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 10.80...11.00
2nd pressure hPa : 400
Rack travel in m: 11.80...12.00

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 220.0...240.0
1000 s: (216.0...244.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 t13
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 646 838T3
 Injection pump
 Pump designation : PE6P120A320LS7808
 EP type number : 0 412 626 816
 Governor
 Governor design. : RQ300/1050PA762-4
 Governor no. : 0 421 801 390

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM441 LA

1st version kW : 240.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 100...120

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 13.90...14.10

 Del. quantity cm³/ : 21.4...21.6
 100 s: (21.1...21.9)

 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.6...6.2
 Del. quantity cm³/ : 1.3...1.9
 100 s: (1.0...2.2)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 900
 Del. quantity : 214.0...216.0
 1000 : (211.0...219.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.80
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 13.00
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 200
Minimum rack trave: 7.90
Speed rpm : 300
Rack travel in mm : 5.60...6.20
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.30
2nd speed rpm : 1050
Rack travel in m: 14.80...15.00
3rd speed rpm : 800
Rack travel in m: 15.00...15.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 13.90...14.10

Measurement

Speed 1/min : 600
1st pressure hPa : 300
Rack travel in m: 10.70...10.90
2nd pressure hPa : 550
Rack travel in m: 12.90...13.10
3rd pressure hPa : 1050
Rack travel in m: 14.00...14.10 *
4th pressure hPa : 1150
Rack travel in m: 14.40...14.70
5th pressure hPa : -
Rack travel in m: 9.50...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1450
Speed rpm : 1050
Del.quantity cm3/ : 236.0...239.0
1000 s: (233.0...242.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1450
Speed rpm : 800
Del.quantity cm3/ : 243.0...247.0
1000 s: (240.0...250.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.80
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 16,0 c1
 Edition : 28.06.91
 Replaces : 31.8.90
 Test oil : ISO-4113

Combination no. : 0 402 646 877

Injection pump
 Pump designation : PE6P130A720RS7122-1
 EP type number : 0 412 636 812
 Governor
 Governor design. : RQV225...930PA922
 Governor no. : 0 421 813 763

Customer-spec. information
 Customer : VOLVO-TRUCK

Engine : TD162 FL,FJ,

1st version kW : 331.0
 Rated speed : 1860

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.30 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 30.1...30.4
 100 s: (29.7...30.7)

Spread cm³ : 0.6
 100 s: (1.0)

2nd speed rpm : 250.0
 Rack travel in mm : 4.9...5.1
 Del.quantity cm³/ : 2.5...3.0
 100 s: (2.3...3.3)

Spread cm³ : 0.5
 100 s: (0.8)

**(B) Setting of injection pump
 with governor**

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 350
 travel mm : 2.10...2.70

3rd speed rpm : 700
 travel mm : 5.60...6.20

4th speed rpm : 975
 travel mm : 8.20...8.40

5th speed rpm : 1090
 travel mm : 9.50...9.90

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1

Speed rpm : 1100
 Rack travel in mm : 7.70...10.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1200

Del.quantity : 301.0...304.0
1000 : (297.5...307.5)
Spread cm³ : 6.00
1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 12.50
Speed rpm : 970...980
2nd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 60...68

Testing:

Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 250
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION

Speed rpm : 250...450

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 85
Rack travel in m: 9.70...9.80
3rd pressure hPa : 720
Rack travel in m: 13.00...13.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 181.0...184.0
1000 s: (177.5...187.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.50
Speed rpm : 970...980

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...140.0
1000 s: (116.0...144.0)
Rack travel in mm : 9.50...9.70

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.90...5.10
Del.quantity cm³/ : 25.5...30.5
1000 s: (23.0...33.0)
Spread cm³ : 5.00
1000 s: (8.00)

Remarks:

:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 g
Edition : 26.07.91
Replaces : 3.6.91
Test oil : ISO-4113

Combination no. : 0 402 646 915

Injection pump
Pump designation : PE6P120A320LS7836
EP type number : 0 412 626 840
Governor
Governor design. : RQ300/1050PA972
Governor no. : 0 421 801 542

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 200.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 105

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
x Wall thickness
x Length mm : 8.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
Rack travel in mm : 20.00...21.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.40...12.60

Del.quantity cm³/ : 18.2...18.4

100 s: (17.9...18.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.5...5.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 800

Del.quantity : 182.0...184.0

1000 : (179.0...187.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.10
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 200
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.50...5.80
Rack travel in mm : 2.00
Speed rpm : 380...420

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 12.40...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : 250
Rack travel in m: 10.20...10.40
2nd pressure hPa : 500
Rack travel in m: 11.60...11.80
3rd pressure hPa : 1000
Rack travel in m: 12.60...12.80
4th pressure hPa : 1150
Rack travel in m: 12.90...13.10
5th pressure hPa : -
Rack travel in m: 9.50...9.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400
Speed rpm : 1050
Del.quantity cm3/ : 201.0...204.0
1000 s: (198.0...207.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 202.0...206.0
1000 s: (199.0...209.0)

Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 9.50...9.80

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 r
 Edition : 05.07.91
 Replaces : 3.5.91
 Test oil : ISO-4113

Combination no. : 0 402 646 916

Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQV300...1050PA797
 -17

Governer no. : 0 421 813 884

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 200.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.40...12.60

Del.quantity cm³/ : 18.2...18.4

100 s: (17.9...18.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.4...5.9
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)

Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50

2nd speed rpm : 600
 travel mm : 4.80...5.30

3rd speed rpm : 820
 travel mm : 5.90...6.40

4th speed rpm : 1107
 travel mm : 8.30...8.80

5th speed rpm : 7183
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1125
 Rack travel in mm : 15.20...17.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 800
Del.quantity : 182.0...184.0
1000 : (179.0...187.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.10
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 200
Minimum rack trave: 7.60
Speed rpm : 300
Rack travel in mm : 5.40...5.90

CONSTANT REGULATION
Speed rpm : 300...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 12.40...12.60

Measurement
Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 12.20...12.40
2nd pressure hPa : 500
Rack travel in m: 11.60...11.80
3rd pressure hPa : 1000
Rack travel in m: 12.60...12.80
4th pressure hPa : 1150
Rack travel in m: 12.90...13.10
5th pressure hPa : -
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 1050
Del.quantity cm³/ : 201.0...204.0
1000 s: (198.0...207.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm³/ : 202.0...206.0
1000 s: (199.0...209.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,1 c
 Edition : 28.06.91
 Replaces : 28.3.91
 Test oil : ISO-4113

Combination no. : 0 402 646 921

Injection pump
 Pump designation : PE6P120A320LS7837
 EP type number : 0 412 626 842
 Governor
 Governor design. : RQ300/1050PA972-3
 Governor no. : 0 421 801 565

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM441 LA

1st version kW : 250.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 14.70...14.90

 Del.quantity cm³/ : 23.4...23.6
 100 s: (23.1...23.9)

 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.6...6.2
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1000
 Del.quantity : 234.0...236.0
 1000 : (231.0...239.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.90
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 200
Minimum rack trave: 7.70
Speed rpm : 300
Rack travel in mm : 5.60...6.20
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 1050
Rack travel in m: 14.90...15.10
3rd speed rpm : 800
Rack travel in m: 15.50...15.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 14.70...14.90

Measurement

Speed 1/min : 600
1st pressure hPa : 200
Rack travel in m: 10.00...10.20
2nd pressure hPa : 600
Rack travel in m: 12.50...12.70
3rd pressure hPa : 1250
Rack travel in m: 14.80...15.00 *
4th pressure hPa : 1400
Rack travel in m: 15.30...15.50
5th pressure hPa : -
Rack travel in m: 9.30...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1800
Speed rpm : 1050

Del.quantity cm3/ : 235.0...238.0
1000 s: (232.0...241.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1800
Speed rpm : 800
Del.quantity cm3/ : 248.0...252.0
1000 s: (245.0...255.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.90
Speed rpm : 1090...1105

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 r 1
 Edition : 28.06.91
 Replaces : 3.6.91
 Test oil : ISO-4113

Combination no. : 0 402 646 939

Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQV300...950PA797-31
 Governor no. : 0 421 813 922

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 200.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 12.40...12.60

 Del.quantity cm³/ : 18.2...18.4
 100 s: (17.9...18.7)

 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.2...5.8
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50
 2nd speed rpm : 617
 travel mm : 5.00...5.50
 3rd speed rpm : 780
 travel mm : 6.10...6.60
 4th speed rpm : 1009
 travel mm : 8.30...8.80
 5th speed rpm : 1092
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1020
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 800
Del.quantity : 182.0...184.0
1000 : (179.0...187.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.10
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1075...1105
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 200
Minimum rack travel: 7.30
Speed rpm : 300
Rack travel in mm : 5.20...5.80

CONSTANT REGULATION
Speed rpm : 300...450

TORQUE CONTROL
Dimension a mm : -.00
2nd speed rpm : 950
Rack travel in m: 13.10...13.30
3rd speed rpm : 800
Rack travel in m: 13.10...13.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 12.40...12.50

Measurement
Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 10.20...10.40
2nd pressure hPa : 500
Rack travel in m: 11.60...11.80
3rd pressure hPa : 1000

Rack travel in m: 12.60...12.80
4th pressure hPa : 1150
Rack travel in m: 12.90...13.10
5th pressure hPa : -
Rack travel in m: 9.50...9.80

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 950
Del.quantity cm3/ : 203.0...206.0
1000 s: (200.0...209.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 202.0...206.0
1000 s: (199.0...209.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 q 1
 Edition : 26.07.91
 Replaces : 3.5.91
 Test oil : ISO-4113

 Combination no. : 0 402 646 940

 Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQ300/950PA971-7
 Governor no. : 0 421 801 580

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 200.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.40...12.60

Del.quantity cm³/ : 18.2...18.4

100 s: (17.9...18.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.9

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 800

Del.quantity : 182.0...184.0

1000 : (179.0...187.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:
1st rack travel in: 12.10
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1065...1095
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:
Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 300
Rack travel in mm : 5.30...5.90
Rack travel in mm : 2.00
Speed rpm : 370...410

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 12.40...12.60

Measurement
Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 10.20...10.40
2nd pressure hPa : 500
Rack travel in m: 11.60...11.80
3rd pressure hPa : 1000
Rack travel in m: 12.60...12.80
4th pressure hPa : 1150
Rack travel in m: 12.90...13.10
5th pressure hPa : -
Rack travel in m: 10.00...10.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 950
Del.quantity cm3/ : 203.0...206.0
1000 s: (200.0...209.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 202.0...206.0
1000 s: (199.0...209.0)

Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 10.00...10.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 L2
 Edition : 21.06.91
 Replaces : 27.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 646 941
 Injection pump
 Pump designation : PE6P120A320RS7218Z
 EP type number : 0 412 626 847
 Governor
 Governor design. : RQ250/1000PA936-1
 Governor no. : 0 421 801 508

Customer-spec. information
 Customer : DAF

Engine : WS 222 G

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.30...5.40
 : (5.25...5.45)

Rack travel in mm : 13.10...14.10

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 4.90...5.10
 & maximum rack tra: 13.1...14.1
 Difference ° CS : 2.25...3.75

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.60...13.70

Del.quantity cm³/ : 19.6...19.8

100 s: (19.3...20.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...6.8

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 196.0...198.0

1000 : (193.0...201.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 12.60
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack trave: 6.50
Speed rpm : 250
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 310...350

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 14.60...14.70
2nd speed rpm : 990
Rack travel in m: 14.50...14.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 13.60...13.70

Measurement

Speed 1/min : 600
1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 390
Rack travel in m: 13.30...13.40
3rd pressure hPa : 310
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 161.0...163.0
1000 s: (158.0...166.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.60
Speed rpm : 1040...1050

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.90...5.10

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 7,2 a
 Edition : 26.07.91
 Replaces :
 Test oil : ISO-4113
 Combination no. : 0 402 646 948
 Injection pump
 Pump designation : PE6P120A32ORS7233-1
 EP type number : 0 412 626 849
 Governor
 Governor design. : RQV300...1300PA1003K
 Governor no. : 0 421 815 281

Customer-spec. information
 Customer : PENTA

Engine : TAMD 72 A
 1st version kW : 316.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 457 413 010
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 1 688 901 105
 Opening pressure, bar : 207...210
 Orifice plate diameter mm : 0,8
 Test lines : 1 680 750 015
 Outside diameter x Wall thickness x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
 : (3.25...3.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200
 Rack travel in mm : 14.60...14.70
 Del. quantity cm³/ : 27.0...27.2
 100 s: (26.7...27.5)
 Spread cm³ : 0.6
 100 s: (1.0)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.2
 Del. quantity cm³/ : 2.0...2.6
 100 s: (1.7...2.7)
 Spread cm³ : 0.7
 100 s: (1.1)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 2.00...2.40
 2nd speed rpm : 550
 travel mm : 4.00...4.60
 3rd speed rpm : 1000
 travel mm : 7.00...7.60
 4th speed rpm : 1350
 travel mm : 10.10...10.30
 5th speed rpm : 1430
 travel mm : 10.90...11.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1500
 Rack travel in mm : 6.00...12.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Aneroid pressure h: 2000

Del.quantity : 270.0...272.0
1000 : (267.0...275.0)
Spread cm³ : 6.00
1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 13.60
Speed rpm : 1330...1340
2nd rack travel in: 4.00
Speed rpm : 1460...1490
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 71...79

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 300
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION

Speed rpm : 300...520

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 14.60...14.70
2nd speed rpm : 1200
Rack travel in m: 14.00...14.30
3rd speed rpm : 1000
Rack travel in m: 12.50...12.90
4th speed rpm : 800
Rack travel in m: 12.10...12.30

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 1300
Pressure hPa : 2000
Rack travel mm : 14.60...14.70

Measurement
Speed 1/min : 1300

1st pressure hPa : -
Rack travel in m: 7.10...7.40
2nd pressure hPa : 350

D03

Rack travel in m: 0.20...0.30
3rd pressure hPa : 1260
Rack travel in m: 4.50...4.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 2000
Speed rpm : 800
Del.quantity cm³/ : 251.0...257.0
1000 s: (248.0...260.0)
Spread cm³ : 9.00
1000 s: (13.0)
Aneroid pressure h: -
Speed rpm : 800
Del.quantity cm³/ : 125.0...127.0
1000 s: (122.0...130.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 1330...1340

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.40...5.60

Remarks:

Start-of-delivery setting with ROBO
diaphragm.

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 n1
Edition : 21.06.91
Replaces : 3.5.91
Test oil : ISO-4113

Combination no. : 0 402 646 949

Injection pump
Pump designation : PE6P120A320RS7230Z
EP type number : 0 412 626 848
Governor
Governor design. : RQV250...1000PA990K
Governor no. : 0 421 815 274

Customer-spec. information
Customer : DAF

Engine : WS 295 G

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 105

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 089

Outside diameter
x Wall thickness
x Length mm : 8.00X2.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 13.70...13.80

Del. quantity cm³/ : 25.4...25.6
100 s : (25.1...25.9)

Spread cm³ : 0.5
100 s : (0.9)

2nd speed rpm : 250.0
Rack travel in mm : 5.8...6.0
Del. quantity cm³/ : 1.4...2.0
100 s : (1.1...2.3)
Spread cm³ : 0.8
100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.30...1.70
2nd speed rpm : 285
travel mm : 2.10...2.50
3rd speed rpm : 1030
travel mm : 9.60...10.00
4th speed rpm : 1145
travel mm : 11.20...11.40

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1070
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 980
Aneroid pressure h: 1500
Del. quantity : 254.0...256.0
1000 : (251.0...259.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 12.70
Speed rpm : 1030...1040
2nd rack travel in: 4.00
Speed rpm : 1135...1165
4th rack travel in: 1275
Speed rpm : 0.00...1.40

LOW IDLE 1
Control lever
position degrees: 65...73

Testing:
Speed rpm : 100
Minimum rack travel: 6.60
Speed rpm : 250
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 320...360

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 500
Rack travel in m: 12.20...12.30
2nd speed rpm : 675
Rack travel in m: 12.60...12.70
3rd speed rpm : 800
Rack travel in m: 13.20...13.40
4th speed rpm : 980
Rack travel in m: 14.10...14.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 980
Pressure hPa : 1500
Rack travel mm : 13.70...13.80

Measurement
Speed 1/min : 980

1st pressure hPa : -
Rack travel in m: 8.10...8.30
2nd pressure hPa : 530
Rack travel in m: 10.80...10.90
3rd pressure hPa : 290
Rack travel in m: 9.10...9.30

FUEL DELIVERY CHARACTERISTICS

1st version

D05

Aneroid pressure h: 1500
Speed rpm : 500
Del.quantity cm3/ : 263.0...267.0
1000 s: (260.0...270.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 143.0...145.0
1000 s: (140.0...148.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.70
Speed rpm : 1030...1040

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.10...5.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 s
 Edition : 21.06.91
 Replaces : 3.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 646 950
 Injection pump
 Pump designation : PE6P120A320LS7837
 EP type number : 0 412 626 842
 Governor
 Governor design. : RQ300/950PA993-2
 Governor no. : 0 421 801 590

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM441 LA

1st version kw : 250.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 14.70...14.90

 Del.quantity cm³/ : 23.3...23.5
 100 s : (23.0...23.8)

 Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.6...6.2
 Del.quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.5)
 Spread cm³ : 0.6
 100 s : (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1000
 Del.quantity : 233.0...235.0
 1000 : (230.0...238.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
1st rack travel in: 14.50
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1065...1095
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:
Speed rpm : 200
Minimum rack travel: 7.90
Speed rpm : 300
Rack travel in mm : 5.60...6.20
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL
Dimension a mm : 0.40
2nd speed rpm : 950
Rack travel in m: 15.50...15.70
3rd speed rpm : 800
Rack travel in m: 15.60...15.80

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 14.70...14.90

Measurement
Speed 1/min : 600

1st pressure hPa : 200
Rack travel in m: 10.00...10.20
2nd pressure hPa : 600
Rack travel in m: 13.50...13.70
3rd pressure hPa : 1250
Rack travel in m: 14.80...15.00 *
4th pressure hPa : 1450
Rack travel in m: 15.40...15.60
5th pressure hPa : -
Rack travel in m: 9.30...9.50

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1800
Speed rpm : 950

Del.quantity cm3/ : 251.0...254.0
1000 s: (248.0...257.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1800
Speed rpm : 800
Del.quantity cm3/ : 250.0...254.0
1000 s: (247.0...257.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.50
Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 q 2
 Edition : 05.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 646 952
 Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQ300/1050PA762-14
 Governor no. : 0 421 801 606

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 180.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 11.70...11.90

Del.quantity cm³/ : 16.4...16.6

100 s: (16.1...16.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.9

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 700

Del.quantity : 164.0...166.0

1000 : (161.0...169.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.30
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 200
Minimum rack trave: 7.40
Speed rpm : 300
Rack travel in mm : 5.30...5.90
Rack travel in mm : 2.00
Speed rpm : 370...410

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.70...11.90

Measurement

Speed 1/min : 600
1st pressure hPa : 200
Rack travel in m: 10.00...10.20
2nd pressure hPa : 400
Rack travel in m: 11.10...11.30
3rd pressure hPa : 900
Rack travel in m: 11.80...12.00 *
4th pressure hPa : -
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400
Speed rpm : 1050
Del.quantity cm3/ : 182.0...185.0
1000 s: (179.0...188.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

* Increase in control-rod travel with
respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 q 3
 Edition : 05.07.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 646 953

Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQ300/950PA762-15
 Governor no. : 0 421 801 607

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kw : 180.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 11.70...11.90

Del.quantity cm³/ : 16.4...16.6

100 s: (16.1...16.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.9

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 700

Del.quantity : 164.0...166.0

1000 : (161.0...169.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.50
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1065...1095
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 300
Rack travel in mm : 5.30...5.90
Rack travel in mm : 2.00
Speed rpm : 370...410

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.70...11.90

Measurement

Speed 1/min : 600
1st pressure hPa : 200
Rack travel in m: 10.00...10.20
2nd pressure hPa : 400
Rack travel in m: 11.10...11.30
3rd pressure hPa : 900
Rack travel in m: 11.80...12.00 *
4th pressure hPa : -
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400
Speed rpm : 950
Del.quantity cm3/ : 187.0...190.0
1000 s: (184.0...193.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 r 2
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 646 957
 Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQV300...1050PA797
 -32
 Governor no. : 0 421 813 957

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kw : 180.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6-3-5-2-4-1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 11.70...11.90

Del.quantity cm³/ : 16.4...16.6

100 s: (16.1...16.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.9

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

2nd speed rpm : 500

travel mm : 5.90...6.10

3rd speed rpm : 950

4th speed rpm : 1009

5th speed rpm : 1160

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 700

Del.quantity : 164.0...166.0
1000 : (161.0...169.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 11.30
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:

Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 300
Rack travel in mm : 5.30...5.90

CONSTANT REGULATION

Speed rpm : 300...550

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.70...11.90

Measurement

Speed 1/min : 600

1st pressure hPa : 200
Rack travel in m: 10.00...10.20
2nd pressure hPa : 400
Rack travel in m: 11.10...11.30
3rd pressure hPa : 900
Rack travel in m: 11.80...12.00 *
4th pressure hPa : -
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 1050
Del.quantity cm³/ : 182.0...185.0
1000 s: (179.0...188.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.30
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 r 3
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 646 958

Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQV300...950PA797-33
 Governor no. : 0 421 813 958

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 180.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 11.70...11.90

Del. quantity cm³/ : 16.4...16.6

100 s: (16.1...16.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.9

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 2.10...2.30

travel mm : 5.90...6.10

travel mm : 6.30...6.50

travel mm : 6.60...6.80

5th speed rpm : 1160

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1000

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 700

Del.quantity : 164.0...166.0
1000 : (161.0...169.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 11.50
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1065...1095
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 300
Rack travel in mm : 5.30...5.90

CONSTANT REGULATION
Speed rpm : 300...550

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.70...11.90

Measurement
Speed 1/min : 600

1st pressure hPa : 200
Rack travel in m: 10.00...10.20
2nd pressure hPa : 400
Rack travel in m: 11.10...11.30
3rd pressure hPa : 900
Rack travel in m: 11.80...12.00 *
4th pressure hPa : -
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 950
Del.quantity cm3/ : 187.0...190.0
1000 s: (184.0...193.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

* Increase in control-rod travel with
respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 q 4
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 646 959
 Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQ300/1050PA993-6
 Governor no. : 0 421 801 616

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 200.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.40...12.60

Del. quantity cm³/ : 18.2...18.4

100 s: (17.9...18.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.5...5.8

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 800
 Del. quantity : 182.0...184.0
 1000 : (179.0...187.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
1st rack travel in: 12.10
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:
Speed rpm : 200
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.50...5.80
Rack travel in mm : 2.00
Speed rpm : 380...420

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 12.40...12.60

Measurement
Speed 1/min : 600

1st pressure hPa : 250
Rack travel in m: 11.20...11.40
2nd pressure hPa : 500
Rack travel in m: 11.60...11.80
3rd pressure hPa : 1000
Rack travel in m: 12.60...12.80
4th pressure hPa : 1150
Rack travel in m: 12.90...13.10
5th pressure hPa : -
Rack travel in m: 9.50...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 1050
Del.quantity cm3/ : 201.0...204.0
1000 s: (198.0...207.0)
Spread cm3 : 8.00
1000 s: (12.0)

Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 202.0...206.0
1000 s: (199.0...209.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 q 5
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 646 960

Injection pump
 Pump designation : PE6P120A320LS7836
 EP type number : 0 412 626 840
 Governor
 Governor design. : RQ300/950PA993-7
 Governor no. : 0 421 801 617

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM401 LA

1st version kW : 200.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6-3-5-2-4-1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 12.40...12.60

 Del. quantity cm³/ : 18.2...18.4
 100 s: (17.9...18.7)

 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.3...5.9
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 800
 Del. quantity : 182.0...184.0
 1000 : (179.0...187.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
1st rack travel in: 12.10
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1065...1095
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:
Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 300
Rack travel in mm : 5.30...5.90
Rack travel in mm : 2.00
Speed rpm : 370...410

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 12.40...12.60

Measurement
Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 11.20...11.40
2nd pressure hPa : 500
Rack travel in m: 11.60...11.80
3rd pressure hPa : 1000
Rack travel in m: 12.60...12.80
4th pressure hPa : 1150
Rack travel in m: 12.90...13.10
5th pressure hPa : -
Rack travel in m: 10.00...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 950
Del.quantity cm3/ : 203.0...206.0
1000 s: (200.0...209.0)
Spread cm3 : 8.00
1000 s: (12.0)

Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 202.0...206.0
1000 s: (199.0...209.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a27
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 812
 Injection pump
 Pump designation : PE8P120A320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQ300/1050PA717
 Governor no. : 0 421 801 258

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 320.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter,
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.70...14.90

Del.quantity cm³/ : 22.0...22.2

100 s: (21.7...22.5)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.7

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.5

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 680

Del.quantity : 220.0...222.0

1000 : (217.0...225.0)

Spread cm³ : 4.00

1000 : (7.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 14.40
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.4

Testing:

Speed rpm : 200
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.10...6.70
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.90
2nd speed rpm : 1050
Rack travel in m: 15.20...15.40
3rd speed rpm : 850
Rack travel in m: 15.80...16.10

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 680
Rack travel mm : 14.70...14.90

Measurement

Speed 1/min : 600

1st pressure hPa : 310
Rack travel in m: 12.10...12.30
2nd pressure hPa : 470
Rack travel in m: 13.70...13.90
3rd pressure hPa : 820
Rack travel in m: 14.90...15.00
4th pressure hPa : 950
Rack travel in m: 15.60...15.90
5th pressure hPa : -
Rack travel in m: 11.30...11.60

START CUT-OUT

D21

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1150
Speed rpm : 1050
Del.quantity cm3/ : 229.0...232.0
1000 s: (226.0...235.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: 1150
Speed rpm : 850
Del.quantity cm3/ : 247.0...251.0
1000 s: (244.0...254.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm3 : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 14.40
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a28
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 824
 Injection pump
 Pump designation : PE8P120A320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQV300...1050PA797
 Governor no. : 0 421 813 532

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 320.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.70...14.90

Del. quantity cm³/ : 22.0...22.2

100 s: (21.7...22.5)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 6.2...6.6

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.5

100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 600
 travel mm : 4.90...5.10

3rd speed rpm : 1075
 travel mm : 7.40...7.60

4th speed rpm : 1100
 travel mm : 8.00...8.20

5th speed rpm : 1150
 travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1
Speed rpm : 1125
Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600
Aneroid pressure h: 680
Del.quantity : 220.0...222.0
1000 : (217.0...225.0)
Spread cm³ : 4.00
1000 : (7.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 14.20
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:

Speed rpm : 100
Minimum rack trave: 7.90
Speed rpm : 300
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION

Speed rpm : 300...500

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed rpm : 1050
Rack travel in m: 15.20...15.40
3rd speed rpm : 850
Rack travel in m: 15.80...16.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 680
Rack travel mm : 13.10...13.30

Measurement

Speed 1/min : 600

D23

1st pressure hPa : 310
Rack travel in m: 13.10...13.30
2nd pressure hPa : 470
Rack travel in m: 13.70...13.90
3rd pressure hPa : 820
Rack travel in m: 14.90...15.00
4th pressure hPa : 1100
Rack travel in m: 15.90...16.00
5th pressure hPa : -
Rack travel in m: 11.40...11.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1150
Speed rpm : 1050
Del.quantity cm³/ : 229.0...232.0
1000 s: (226.0...235.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1150
Speed rpm : 850
Del.quantity cm³/ : 247.0...251.0
1000 s: (244.0...254.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 14.20
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a29
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 825
 Injection pump
 Pump designation : PE8P12DA320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQV300...1050PA797-3
 Governor no. : 0 421 813 627

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 500

Rack travel in mm : 14.00...14.20

Del. quantity cm³/ : 20.1...20.3

100 s: (19.8...20.6)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.4
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.5
 100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 600
 travel mm : 4.90...5.10
 3rd speed rpm : 1075
 travel mm : 7.40...7.60
 4th speed rpm : 1100
 travel mm : 8.00...8.20
 5th speed rpm : 1150
 travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1
Speed rpm : 1125
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 500
Aneroid pressure h : 650
Del. quantity : 201.0...203.0
1000 : (198.0...206.0)
Spread cm³ : 4.00
1000 : (7.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 11.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 200
Minimum rack trave: 7.70
Speed rpm : 300
Rack travel in mm : 6.00...6.40

CONSTANT REGULATION
Speed rpm : 300...450

TORQUE CONTROL
Dimension a mm : 1.40
2nd speed rpm : 1050
Rack travel in m: 12.70...12.90
3rd speed rpm : 850
Rack travel in m: 13.70...14.00
4th speed rpm : 700
Rack travel in m: 14.30...14.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 650
Rack travel mm : 14.00...14.20

D25

Measurement
Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.30...13.60
3rd pressure hPa : 850
Rack travel in m: 14.10...14.20 *
4th pressure hPa : -
Rack travel in m: 11.40...11.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1050
Speed rpm : 1050
Del. quantity cm³/ : 180.0...183.0
1000 s: (177.0...186.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1050
Speed rpm : 700
Del. quantity cm³/ : 215.0...219.0
1000 s: (212.0...222.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1050
Speed rpm : 850
Del. quantity cm³/ : 206.0...210.0
1000 s: (203.0...213.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 175.0...190.0
1000 s: (171.0...194.0)

* Increase in control-rod travel with respect to setting at least 0.1 mm



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a30
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 648 833

Injection pump
 Pump designation : PE8P120A320LS7801-1
 EP type number : 0 412 628 818
 Governor
 Governor design. : RQV350...1050PA866-3
 Governor no. : 0 421 813 703

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.80...12.90

Del.quantity cm³/ : 18.1...18.3

100 s: (17.8...18.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.6...6.0

Del.quantity cm³/ : 1.5...2.1

100 s: (1.2...2.4)

Spread cm³ : 0.6

100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 600
 travel mm : 4.90...5.10

3rd speed rpm : 1100
 travel mm : 8.00...8.50

4th speed rpm : 1170
 travel mm : 9.20...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1090

Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050
Aneroid pressure h : 1100
Del. quantity : 181.0...183.0
1000 : (178.0...186.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 118...126

Testing:

1st rack travel in: 11.80
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 250
Minimum rack travel: 7.30
Speed rpm : 350
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION

Speed rpm : 350...550

TORQUE CONTROL

Dimension a mm : 1.60
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 12.80...12.90
2nd speed rpm : 750
Rack travel in m: 14.40...14.60
3rd speed rpm : 950
Rack travel in m: 13.50...13.60
4th speed rpm : 830
Rack travel in m: 14.30...14.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : -
Rack travel mm : 11.20...11.50

Measurement

Speed 1/min : 600

1st pressure hPa : 420
Rack travel in m: 11.90...12.10
2nd pressure hPa : 600
Rack travel in m: 13.60...13.80

START CUT-OUT

Speed 1/min : 270 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1100
Speed rpm : 700
Del. quantity cm³/ : 213.0...217.0
1000 s: (210.0...220.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1100
Speed rpm : 1050
Del. quantity cm³/ : 152.0...154.0 *
1000 s: (149.0...157.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 180.0...200.0
1000 s: (176.0...204.0)

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a31
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 841
 Injection pump
 Pump designation : PE8P120A320LS7801-1
 EP type number : 0 412 628 818
 Governor
 Governor design. : RQ300/1050PA762-5
 Governor no. : 0 421 801 399

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 500

Rack travel in mm : 14.00...14.20

Del.quantity cm³/ : 20.3...20.5

100 s: (20.0...20.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 6.0...6.6

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.5

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 500

Aneroid pressure h: 650

Del.quantity : 203.0...205.0

1000 : (200.0...208.0)

Spread cm³ : 4.00

1000 : (7.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.70
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.3

Testing:

Speed rpm : 200
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.20...6.40
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.75
2nd speed rpm : 1050
Rack travel in m: 12.70...12.90
3rd speed rpm : 850
Rack travel in m: 13.70...14.00
4th speed rpm : 700
Rack travel in m: 14.40...14.60

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 650
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.30...13.60
3rd pressure hPa : 850
Rack travel in m: 14.10...14.20
4th pressure hPa : -
Rack travel in m: 11.40...11.70

START CUT-OUT

ED2

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1050
Speed rpm : 1050
Del.quantity cm3/ : 180.0...183.0
1000 s: (177.0...186.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: 1050
Speed rpm : 700
Del.quantity cm3/ : 215.0...219.0
1000 s: (212.0...222.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: 1050
Speed rpm : 850
Del.quantity cm3/ : 206.0...210.0
1000 s: (203.0...213.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm3 : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 175.0...190.0
1000 s: (171.0...194.0)

* Increase in control-rod travel with
respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 j 4
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 844
 Injection pump
 Pump designation : PE8P120A320LS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQ300/1050PA717-2
 Governor no. : 0 421 801 439

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 353.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)

Rack travel in mm : 20.00...21.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.60...13.80

Del.quantity cm³/ : 23.4...23.7

100 s: (23.1...24.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.5

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.5

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 900

Del.quantity : 234.0...237.0

1000 : (231.0...240.0)

Spread cm³ : 4.00

1000 : (7.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.40
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 200
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 5.90...6.50
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed rpm : 1050
Rack travel in m: 14.40...14.60
3rd speed rpm : 850
Rack travel in m: 15.00...15.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 13.60...13.80

Measurement

Speed 1/min : 600
1st pressure hPa : 350
Rack travel in m: 12.10...12.30
2nd pressure hPa : 650
Rack travel in m: 12.80...13.00
3rd pressure hPa : 1050
Rack travel in m: 13.70...13.90 *
4th pressure hPa : 1350
Rack travel in m: 14.50...14.70
5th pressure hPa : -
Rack travel in m: 10.20...10.50

START CUT-OUT

E04

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1600
Speed rpm : 1050
Del.quantity cm³/ : 252.0...256.0
1000 s: (249.0...259.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1600
Speed rpm : 850
Del.quantity cm³/ : 270.0...274.0
1000 s: (267.0...277.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.40
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...260.0
1000 s: (236.0...264.0)

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 j+2
 Edition : 28.06.91
 Replaces : 3.6.91
 Test oil : ISO-4113

Combination no. : 0 402 648 844A

Injection pump
 Pump designation : PE8P120A32OLS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQ300/1050PA717-2
 Governor no. : 0 421 801 439

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.10...13.30

Del.quantity cm³/ : 22.9...23.2
 100 s: (22.6...23.5)

Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.5
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)

Spread cm³ : 0.5
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2

Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 800
 Del.quantity : 229.0...232.0
 1000 : (226.0...235.0)

Spread cm³ : 4.00
 1000 : (7.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.90
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 200
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 5.90...6.50
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed rpm : 1050
Rack travel in m: 13.90...14.60
3rd speed rpm : 850
Rack travel in m: 14.50...14.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 13.10...13.30

Measurement

Speed 1/min : 600
1st pressure hPa : 350
Rack travel in m: 11.30...11.50
2nd pressure hPa : 550
Rack travel in m: 12.40...12.60
3rd pressure hPa : 950
Rack travel in m: 13.30...13.50
4th pressure hPa : 1250
Rack travel in m: 14.10...14.30
5th pressure hPa : -
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1600

EO6

Speed rpm : 1050
Del.quantity cm3/ : 241.0...245.0
1000 s: (238.0...248.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: 1600
Speed rpm : 850
Del.quantity cm3/ : 254.0...258.0
1000 s: (251.0...261.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm3 : 7.00
1000 s: (10.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.90
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 j 3
 Edition : 05.07.91
 Replaces : 3.6.91
 Test oil : ISO-4113

Combination no. : 0 402 648 844A

Injection pump
 Pump designation : PE8P120A32DLS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQ300/1050PA717-2
 Governor no. : 0 421 801 439

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 100...120

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

E07

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)

Rack travel in mm : 20.00...21.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.10...13.30

Del. quantity cm³/ : 22.5...22.8
 100 s: (22.2...23.1)

Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.5

Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)

Spread cm³ : 0.5
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 800

Del. quantity : 225.0...228.0
 1000 : (222.0...231.0)

Spread cm³ : 4.00
 1000 : (7.00)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
1st rack travel in: 12.90
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:
Speed rpm : 200
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 5.90...6.50
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL
Dimension a mm : 0.40
2nd speed rpm : 1050
Rack travel in m: 13.90...14.60
3rd speed rpm : 850
Rack travel in m: 14.50...14.80

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 13.10...13.30

Measurement
Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 11.50...11.70
2nd pressure hPa : 550
Rack travel in m: 12.40...12.60
3rd pressure hPa : 950
Rack travel in m: 13.30...13.50
4th pressure hPa : 1250
Rack travel in m: 14.10...14.30
5th pressure hPa : -
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1600
Speed rpm : 1050
Del.quantity cm3/ : 243.0...247.0
1000 s: (240.0...250.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: 1600
Speed rpm : 850
Del.quantity cm3/ : 261.0...265.0
1000 s: (258.0...268.0)
Spread cm3 : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm3 : 7.00
1000 s: (10.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 k 4
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 845
 Injection pump
 Pump designation : PE8P120A320LS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQV300...1050PA797-5
 Governor no. : 0 421 813 702

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 353.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.60...13.80

Del.quantity cm³/ : 23.4...23.6

100 s: (23.1...23.9)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.5

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.5

100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 800
 travel mm : 5.80...6.10

3rd speed rpm : 1120
 travel mm : 8.20...8.80

4th speed rpm : 1180
 travel mm : 9.60...10.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600
Aneroid pressure h: 900
Del.quantity : 234.0...236.0
1000 : (231.0...239.0)
Spread cm³ : 4.00
1000 : (7.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 13.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:

Speed rpm : 200
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 5.90...6.50

CONSTANT REGULATION

Speed rpm : 300...500

TORQUE CONTROL

Dimension a mm : 1.30
2nd speed rpm : 1050
Rack travel in m: 14.40...14.60
3rd speed rpm : 800
Rack travel in m: 14.90...15.10

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 13.60...13.80

Measurement

Speed 1/min : 600

1st pressure hPa : 350

E10

Rack travel in m: 11.10...11.30
2nd pressure hPa : 650
Rack travel in m: 12.80...13.00
3rd pressure hPa : 1050
Rack travel in m: 13.70...13.90 *
4th pressure hPa : 1350
Rack travel in m: 14.50...14.70
5th pressure hPa : -
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1600
Speed rpm : 1050
Del.quantity cm³/ : 252.0...256.0
1000 s: (249.0...259.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1600
Speed rpm : 800
Del.quantity cm³/ : 270.0...274.0
1000 s: (267.0...277.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...260.0
1000 s: (236.0...264.0)

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 k 2
 Edition : 05.07.91
 Replaces : 3.6.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 845A
 Injection pump
 Pump designation : PE8P120A320LS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQV300...1050PA797-5
 Governor no. : 0 421 813 702

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Test nozzle holder
 assembly : 1 688 901 105
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 075
 Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 13.10...13.30
 Del. quantity cm³/ : 22.9...23.2
 100 s: (22.6...23.5)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.5
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.5
 100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 800
 travel mm : 5.80...6.10
 3rd speed rpm : 1120
 travel mm : 8.20...8.80
 4th speed rpm : 1180
 travel mm : 9.60...10.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 800

Del.quantity : 229.0...232.0
1000 : (226.0...235.0)
Spread cm³ : 4.00
1000 : (7.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 12.90
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:

Speed rpm : 200
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 5.90...6.50

CONSTANT REGULATION

Speed rpm : 300...500

TORQUE CONTROL

Dimension a mm : 1.30
2nd speed rpm : 1050
Rack travel in m: 13.90...14.10
3rd speed rpm : 800
Rack travel in m: 14.50...14.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 13.10...13.30

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 11.30...11.50
2nd pressure hPa : 550
Rack travel in m: 12.40...12.60
3rd pressure hPa : 950
Rack travel in m: 13.30...13.50
4th pressure hPa : 1200
Rack travel in m: 14.10...14.30

5th pressure hPa : -
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1600
Speed rpm : 1050
Del.quantity cm³/ : 241.0...245.0
1000 s: (238.0...248.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1600
Speed rpm : 800
Del.quantity cm³/ : 254.0...258.0
1000 s: (251.0...261.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 k 3
 Edition : 05.07.91
 Replaces : 3.6.91
 Test oil : ISO-4113

Combination no. : 0 402 648 845A

Injection pump
 Pump designation : PE8P120A320LS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQV300...1050PA797-5
 Governor no. : 0 421 813 702

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

E13

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)

Rack travel in mm : 20.00...21.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.10...13.30

Del. quantity cm³/ : 22.5...22.8
 100 s: (22.2...23.1)

Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.5
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)

Spread cm³ : 0.5
 100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 800
 travel mm : 5.80...6.10

3rd speed rpm : 1120
 travel mm : 8.20...8.80

4th speed rpm : 1180
 travel mm : 9.60...10.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600

Aneroid pressure h: 800
Del. quantity : 225.0...228.0
1000 : (222.0...231.0)
Spread cm³ : 4.00
1000 : (7.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 12.90
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 200
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 5.90...6.50

CONSTANT REGULATION
Speed rpm : 300...500

TORQUE CONTROL
Dimension a mm : 1.30
2nd speed rpm : 1050
Rack travel in m: 13.90...14.10
3rd speed rpm : 800
Rack travel in m: 14.50...14.80

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 13.10...13.30

Measurement
Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 11.30...11.50
2nd pressure hPa : 550
Rack travel in m: 12.40...12.60
3rd pressure hPa : 950
Rack travel in m: 13.30...13.50
4th pressure hPa : 1200

E14

Rack travel in m: 14.10...14.30
5th pressure hPa : -
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1600
Speed rpm : 1050
Del. quantity cm³/ : 243.0...247.0
1000 s: (240.0...250.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: 1600
Speed rpm : 800
Del. quantity cm³/ : 261.0...265.0
1000 s: (258.0...268.0)
Spread cm³ : 7.00
1000 s: (10.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 e
 Edition : 28.06.91
 Replaces : 8.6.90
 Test oil : ISO-4113

Combination no. : 0 402 648 854

Injection pump
 Pump designation : PE8P130A920/5LS7822
 EP type number : 0 412 638 802
 Governor
 Governor design. : RQV300...950PA905
 Governor no. : 0 421 813 723

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8280.42.001

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 688 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.10...5.20
 : (5.05...5.25)

Rack travel in mm : 9.00...12.00

E15

Firing order : 1- 8- 4- 3- 6- 5-
 7- 2

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 550

Rack travel in mm : 11.40...11.50

Del.quantity cm³/ : 22.8...23.1

100 s: (22.4...23.4)

Spread cm³ : 0.8

100 s: (1.2)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.5

Del.quantity cm³/ : 2.0...2.6

100 s: (1.6...3.0)

Spread cm³ : 0.6

100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
 travel mm : 0.60...1.10

2nd speed rpm : 350
 travel mm : 2.10...2.50

3rd speed rpm : 600
 travel mm : 3.80...4.40

4th speed rpm : 950
 travel mm : 7.20...7.40

5th speed rpm : 1200
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1020

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 550

Aneroid pressure h: 900

Del.quantity : 228.0...231.0

1000 : (224.5...234.5)

Spread cm³ : 8.00
1000 : (12.00)

RATED SPEED

1st version
Control lever
position degrees: 109...117

Testing:
1st rack travel in: 10.40
Speed rpm : 995...1005
2nd rack travel in: 4.00
Speed rpm : 1080...1110
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 63...71

Testing:
Speed rpm : 200
Minimum rack travel: 7.70
Speed rpm : 300
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION
Speed rpm : 380...480

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.40...11.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.30...9.60
2nd pressure hPa : 440
Rack travel in m: 11.10...11.20
3rd pressure hPa : 400
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del.quantity cm³/ : 208.0...215.0
1000 s: (204.5...218.5)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 168.0...171.0
1000 s: (164.5...174.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.40
Speed rpm : 995...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 210.0...240.0
1000 s: (206.0...244.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 s 2
 Edition : 21.06.91
 Replaces : 24.4.91
 Test oil : ISO-4113

Combination no. : 0 402 746 906

Injection pump
 Pump designation : PES6P120A720LS7196
 EP type number : 0 412 726 831
 Governor
 Governor design. : RQV450...1050PA985
 Governor no. : 0 421 813 917

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 h LA

1st version kW : 304.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 19.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 15.20...15.40

Del.quantity cm³/ : 28.4...28.6

100 s: (28.1...28.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 450.0

Rack travel in mm : 4.0...4.6

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 450
 travel mm : 1.10...1.60

2nd speed rpm : 650
 travel mm : 3.50...4.00

3rd speed rpm : 940
 travel mm : 5.50...6.00

4th speed rpm : 1107
 travel mm : 7.30...7.80

5th speed rpm : 1226
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 950
Del.quantity : 284.0...286.0
1000 : (281.0...289.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control Lever
position degrees: 113...121

Testing:
1st rack travel in: 14.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 61...69

Testing:
Speed rpm : 300
Minimum rack trave: 5.90
Speed rpm : 450
Rack travel in mm : 4.00...4.60

CONSTANT REGULATION
Speed rpm : 450...650

TORQUE CONTROL
Dimension a mm : 0.60
2nd speed rpm : 1050
Rack travel in m: 15.40...15.60
3rd speed rpm : 900
Rack travel in m: 15.70...15.90
4th speed rpm : 800
Rack travel in m: 16.00...16.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 950
Rack travel mm : 15.20...15.40

Measurement
Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 11.90...12.10
2nd pressure hPa : 600

E18

Rack travel in m: 13.80...14.00
3rd pressure hPa : 1200
Rack travel in m: 16.60...16.80
4th pressure hPa : -
Rack travel in m: 9.80...10.20

START CUT-OUT

Speed 1/min : 370 (390)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1600
Speed rpm : 1050
Del.quantity cm3/ : 280.0...283.0
1000 s: (277.0...286.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1600
Speed rpm : 800
Del.quantity cm3/ : 298.0...302.0
1000 s: (295.0...305.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 280.0...300.0
1000 s: (276.0...304.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 o
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 908
 Injection pump
 Pump designation : PES6P120A320RS7232
 EP type number : 0 412 726 846
 Governor
 Governor design. : RQV275...1000PA1001
 Governor no. : 0 421 813 931

Customer-spec. information
 Customer : RVI

Engine : MIDR 062045 E/3

1st version kW : 249.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.65...4.75
 : (4.60...4.80)
 Rack travel in mm : 18.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 13.60...13.70
 Del.quantity cm³/ : 26.1...26.3
 100 s: (25.8...26.6)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 4.80...5.20
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1070
 travel mm : 8.20...8.40
 2nd speed rpm : 275
 travel mm : 1.10...1.50
 3rd speed rpm : 500
 travel mm : 3.60...4.20
 4th speed rpm : 850
 travel mm : 6.40...6.80
 5th speed rpm : 1400
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1060
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1000
 Del.quantity : 261.0...263.0
 1000 : (258.0...266.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 298...306

Testing:
1st rack travel in: 12.60
Speed rpm : 1065...1075
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 243...251
Speed rpm : 275
Rack travel in mm : 4.90...5.00

CONSTANT REGULATION
Speed rpm : 310...430

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 13.60...13.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 560
Rack travel in m: 12.90...13.00
3rd pressure hPa : 200
Rack travel in m: 10.00...10.20

START CUT-OUT

Speed 1/min : 225 (245)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm³/ : 234.0...240.0
1000 s: (231.0...243.0)
Aneroid pressure h: -
Speed rpm : 500

E20

Del.quantity cm³/ : 113.0...115.0
1000 s: (110.0...118.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.60
Speed rpm : 1065...1075

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...160.0
1000 s: (126.0...164.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.80...5.20
Del.quantity cm³/ : 16.0...22.0
1000 s: (13.0...25.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 12,0 k
 Edition : 28.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 909
 Injection pump
 Pump designation : PES6P120A32ORS7236
 EP type number : 0 412 726 848
 Governor
 Governor design. : RQV275...1000PA1001-
 1
 Governor no. : 0 421 813 936

Customer-spec. information
 Customer : RVI

Engine : MIDR 063540 J/3

1st version kW : 306.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness : 6.00x1.50x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)
 Rack travel in mm : 13.00...14.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.60...13.70

Del. quantity cm³/ : 30.3...30.5

100 s: (30.0...30.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 4.60...5.00

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1070

travel mm : 8.30...8.50

2nd speed rpm : 275

travel mm : 1.10...1.50

3rd speed rpm : 500

travel mm : 3.60...4.20

4th speed rpm : 750

travel mm : 5.70...6.10

5th speed rpm : 1400

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1000

Del.quantity : 303.0...305.0
1000 : (300.0...308.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 298...306

Testing:

1st rack travel in: 12.60
Speed rpm : 1065...1075
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 242...250

Testing:

Speed rpm : 200
Minimum rack travel: 5.50
Speed rpm : 275
Rack travel in mm : 4.30...4.50

CONSTANT REGULATION

Speed rpm : 310...430

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 13.60...13.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.00...8.40
2nd pressure hPa : 680
Rack travel in m: 12.70...12.80
3rd pressure hPa : 240
Rack travel in m: 9.20...9.60

START CUT-OUT

Speed 1/min : 225 (245)

FUEL DELIVERY CHARACTERISTICS

1st version

E22

Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm3/ : 278.0...284.0
1000 s: (275.0...287.0)
Speed rpm : 500
Del.quantity cm3/ : 128.0...138.0
1000 s: (125.0...141.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.60
Speed rpm : 1065...1075

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.20...4.60
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 t4
Edition : 05.07.91
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 746 910
Injection pump
Pump designation : PES6P120A720LS7209-1
EP type number : 0 412 726 849
Governor
Governor design. : RQV300...1100PA1006K
Governor no. : 0 421 815 283

Customer-spec. information
Customer : MAN

Engine : D2866LXE
1st version kW : 324.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder assembly : 1 688 901 105
Opening pressure, bar : 207...210
Orifice plate diameter mm : 0,8
Test lines : 1 680 750 015
Outside diameter x Wall thickness x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.80...4.90
: (4.75...4.95)
Rack travel in mm : 12.50...13.50
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 6

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 4.40...4.60
& maximum rack tra: 12.5...13.5
Difference ° CS : 1.75...3.25

BASIC SETTING

1st speed rpm : 1100
Rack travel in mm : 13.00...13.10
Del.quantity cm3/ : 25.2...25.4
100 s: (24.9...25.7)
Spread cm3 : 0.5
100 s: (0.9)
2nd speed rpm : 300.0
Rack travel in mm : 4.8...5.2
Del.quantity cm3/ : 2.0...2.6
100 s: (1.7...2.9)
Spread cm3 : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1145
travel mm : 9.60...9.80
2nd speed rpm : 300
travel mm : 1.40...1.80
3rd speed rpm : 500
travel mm : 3.20...3.80
4th speed rpm : 900
travel mm : 7.00...7.40
5th speed rpm : 1450
travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1200
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: 1200
Del.quantity : 252.0...254.0
1000 : (249.0...257.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 12.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 67...75

Testing:
Speed rpm : 100
Minimum rack trave: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 290...420

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 13.00...13.10
2nd speed rpm : 900
Rack travel in m: 11.70...11.90
3rd speed rpm : 700
Rack travel in m: 11.00...11.20
4th speed rpm : 500
Rack travel in m: 11.00...11.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1100
Pressure hPa : 1200
Rack travel mm : 13.00...13.10

Measurement
Speed 1/min : 1100

1st pressure hPa : -
Rack travel in m: 9.00...9.20
2nd pressure hPa : 100
Rack travel in m: 9.40...9.50
3rd pressure hPa : 560
Rack travel in m: 12.00...12.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 900
Del.quantity cm³/ : 222.0...228.0
1000 s: (219.0...231.0)
Aneroid pressure h: 1200
Speed rpm : 700
Del.quantity cm³/ : 218.0...224.0
1000 s: (215.0...227.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 166.0...168.0
1000 s: (163.0...171.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 210.0...230.0
1000 s: (206.0...234.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.20
Del.quantity cm³/ : 20.0...26.0
1000 s: (17.0...29.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7071

Setting and blocking of pointer of

start-of-delivery sensor on cyl. 6
start of delivery



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAC 12,0 m
 Edition : 18.06.91
 Replaces : 13.5.91
 Test oil : ISO-4113

Combination no. : 0 402 746 911

Injection pump
 Pump designation : PES6P120A720RS7239
 EP type number : 0 412 726 850
 Governor
 Governor design. : RQV325...900PA944-13.
 K
 Governor no. : 0 421 815 284

Customer-spec. information
 Customer : MACK TRUCKS

Engine : E7-350 ITC

1st version kW : 261.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 011

Overflow
 quantity min. 1/h: 160...170

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 3.25...3.35
 : (3.20...3.40)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.80...12.90

Del.quantity cm³/ : 23.1...23.3
 100 s: (22.8...23.6)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 325.0
 Rack travel in mm : 5.0...5.2
 Del.quantity cm³/ : 4.6...5.2
 100 s: (4.4...5.4)

Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
 travel mm : 1.20...1.40

2nd speed rpm : 450
 travel mm : 2.80...3.20

3rd speed rpm : 650
 travel mm : 5.60...5.80

4th speed rpm : 900
 travel mm : 8.30...8.50

5th speed rpm : 1100
 travel mm : 10.30...10.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Aneroid pressure h: 1200
 Del.quantity : 231.5...233.5
 1000 : (228.5...236.5)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 11.80

Speed rpm : 940...990

2nd rack travel in: 4.00

Speed rpm : 1090...1100

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 275

Minimum rack travel: 6.20

Speed rpm : 325

Rack travel in mm : 5.00...5.20

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : ?

Torque control curve - 1st version

1st speed rpm : 900

Rack travel in m: 12.80...12.90

2nd speed rpm : 625

Rack travel in m: 12.70...13.00

3rd speed rpm : 550

Rack travel in m: 11.80...12.20

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 625

Pressure hPa : 1200

Rack travel mm : 12.70...13.00

Measurement

Speed 1/min : 625

1st pressure hPa : -

Rack travel in m: 7.40...7.80

2nd pressure hPa : 365

Rack travel in m: 8.90...9.00

3rd pressure hPa : 665

Rack travel in m: 11.30...11.70

START CUT-OUT

E27

Speed 1/min : 250 (255)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed rpm : 625

Del.quantity cm³/ : 266.5...272.5

1000 s: (263.5...275.5)

Spread cm³ : 8.00

1000 s: (12.0)

Speed rpm : 875

Del.quantity cm³/ : 199.0...201.0 *

1000 s: (180.5...207.0)

Aneroid pressure h: -

Speed rpm : 400

Del.quantity cm³/ : 147.5...151.5

1000 s: (145.5...153.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rpm : 940...990

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 210.0...240.0

1000 s: (205.0...245.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 325

Rack travel in mm : 5.00...5.20

Del.quantity cm³/ : 46.5...52.5

1000 s: (44.5...54.5)

Spread cm³ : 8.00

1000 s: (12.00)

Remarks:

: MACK # 313GC5203-P8

Bow dimension:

Sliding-sleeve position = 37.0 mm

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery

* This test specification applies only to the engine/nozzle-and-holder assemblies on an injection-pump test bench: setting for test equipment, check value for engine equipment.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAC 12,0 m1
 Edition : 18.06.91
 Replaces : 13.5.91
 Test oil : ISO-4113

Combination no. : 0 402 746 912

Injection pump
 Pump designation : PES6P120A72ORS7239
 EP type number : 0 412 726 850
 Governor
 Governor design. : RQV325...875PA944-14
 K
 Governor no. : 0 421 815 285

Customer-spec. information
 Customer : MACK TRUCKS

Engine : EM7-300 ITC

1st version kW : 224.0
 Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 011

Overflow
 quantity min. 1/h: 160...170

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

FD1

Test pressure, bar: 22...24

Prestroke mm : 3.25...3.35
 : (3.20...3.40)
 Rack travel in mm : 11.00...13.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 875

Rack travel in mm : 11.20...11.30

Del. quantity cm³/ : 21.6...21.8
 100 s: (21.3...22.1)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 325.0
 Rack travel in mm : 4.4...4.6
 Del. quantity cm³/ : 4.6...5.2
 100 s: (4.4...5.4)

Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
 travel mm : 1.70...1.90
 2nd speed rpm : 450
 travel mm : 4.20...4.60
 3rd speed rpm : 650
 travel mm : 8.00...8.40
 4th speed rpm : 900
 travel mm : 10.00...10.20
 5th speed rpm : 1000
 travel mm : 10.80...11.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 875
 Aneroid pressure h: 1200
 Del. quantity : 216.5...218.5
 1000 : (213.5...221.5)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control Lever
position degrees: 63...71

Testing:
1st rack travel in: 10.20
Speed rpm : 915...965
2nd rack travel in: 4.00
Speed rpm : 1015...1025
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 9...17

Testing:
Speed rpm : 275
Minimum rack trave: 6.00
Speed rpm : 325
Rack travel in mm : 4.40...4.60

CONSTANT REGULATION
Speed rpm : 325...520

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 875
Rack travel in m: 11.20...11.30
2nd speed rpm : 510
Rack travel in m: 12.90...13.10
3rd speed rpm : 450
Rack travel in m: 11.80...12.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 510
Pressure hPa : 1200
Rack travel mm : 12.90...13.10

Measurement
Speed 1/min : 510

1st pressure hPa : -
Rack travel in m: 7.10...7.50
2nd pressure hPa : 370
Rack travel in m: 8.70...8.80
3rd pressure hPa : 730
Rack travel in m: 11.50...11.90

START CUT-OUT

F02

Speed 1/min : 250 (255)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 510
Del.quantity cm3/ : 315.5...321.5
1000 s: (312.5...324.5)
Spread cm3 : 8.00
1000 s: (12.0)
Speed rpm : 875
Del.quantity cm3/ : 199.0...201.0 *
1000 s: (159.5...183.0)
Aneroid pressure h: -
Speed rpm : 400
Del.quantity cm3/ : 160.0...164.0
1000 s: (158.0...166.0)

BREAKAWAY.

1st version
1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 915...965

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 210.0...240.0
1000 s: (205.0...245.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.40...4.60
Del.quantity cm3/ : 46.0...52.0
1000 s: (44.0...54.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks: : MACK # 313GC5203-P6

Bow dimension:
Sliding-sleeve position = 37.0 mm
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

* This test specification applies only
to the engine/nozzle-and-holder
assemblies on an injection-pump test
bench: setting for test equipment,
check value for engine equipment.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 u
 Edition : 03.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 913
 Injection pump
 Pump designation : PES6P120A720LS7237
 EP type number : 0 412 726 851
 Governor
 Governor design. : RQ300/1100PA1008-1
 Governor no. : 0 421 801 592

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 HA

1st version kW : 184.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 100...120

Test nozzle holder assembly : 1 688 901 105

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall thickness x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.20...12.40

Del. quantity cm³/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...7.1

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 400

Del. quantity : 160.0...162.0

1000 : (157.0...165.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.00
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 13.00
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 200
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 5.80...6.40
Rack travel in mm : 2.00
Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 14.00...14.20
2nd speed rpm : 800
Rack travel in m: 14.30...14.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 400
Rack travel mm : 12.20...12.40

Measurement

Speed 1/min : 600
1st pressure hPa : 150
Rack travel in m: 11.30...11.50
2nd pressure hPa : 250
Rack travel in m: 11.90...12.10
3rd pressure hPa : 600
Rack travel in m: 12.40...12.60
4th pressure hPa : 1100
Rack travel in m: 13.70...13.90
5th pressure hPa : -
Rack travel in m: 11.10...11.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400
Speed rpm : 1100

F05

Del.quantity cm3/ : 210.0...213.0
1000 s: (207.0...216.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 222.0...226.0
1000 s: (219.0...229.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 128.0...130.0
1000 s: (125.0...133.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 1145...1160

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 o 1
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 915
 Injection pump
 Pump designation : PES6P120A32ORS7232
 EP type number : 0 412 726 846
 Governor
 Governor design. : RQ275/1050PA999-2
 Governor no. : 0 421 801 594

Customer-spec. information
 Customer : RVI

Engine : MIDR 06-20-45

1st version kW : 249.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.65...4.75
 : (4.60...4.80)
 Rack travel in mm : 18.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 13.10...13.20
 Del.quantity cm³/ : 23.5...23.7
 100 s: (23.2...24.0)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 4.60...5.00
 Del.quantity cm³/ : 1.5...2.1
 100 s: (1.2...2.4)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1000
 Del.quantity : 235.0...237.0
 1000 : (232.0...240.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 12.10
 Speed rpm : 1025...1040
 2nd rack travel in: 4.00

Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 275
Rack travel in mm : 8.3

Testing:

Speed rpm : 200
Minimum rack travel: 6.00
Speed rpm : 275
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 600
Rack travel in m: 13.50...13.60
2nd speed rpm : 1050
Rack travel in m: 13.40...13.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 13.10...13.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.60...9.00
2nd pressure hPa : 560
Rack travel in m: 12.50...12.60
3rd pressure hPa : 200
Rack travel in m: 9.60...10.00

START CUT-OUT

Speed 1/min : 225 (245)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050
Del.quantity cm³/ : 207.0...213.0
1000 s: (204.0...216.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 92.0...94.0
1000 s: (89.0...97.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1025...1040

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...160.0
1000 s: (126.0...164.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.60...5.00
Del.quantity cm³/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 u 1
Edition : 26.07.91
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 746 916

Injection pump
Pump designation : PES6P120A720LS7237
EP type number : 0 412 726 851
Governor
Governor design. : RQ300/1100PA1010
Governor no. : 0 421 801 596

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM447 hA

1st version kW : 184.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 105

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
x Wall thickness
x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Rack travel in mm : 20.00...21.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.20...12.40

Del. quantity cm³/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 5.8...6.4
Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 400
Del. quantity : 160.0...162.0

1000 : (157.0...165.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.00
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 200
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 5.80...6.40
Rack travel in mm : 2.00
Speed rpm : 390...430

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 1100
Rack travel in m: 14.00...14.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 400
Rack travel mm : 12.20...12.40

Measurement

Speed 1/min : 600
1st pressure hPa : 150
Rack travel in m: 11.30...11.50
2nd pressure hPa : 250
Rack travel in m: 11.90...12.10
3rd pressure hPa : 600
Rack travel in m: 12.40...12.60
4th pressure hPa : 1100
Rack travel in m: 13.70...13.90
5th pressure hPa : -
Rack travel in m: 11.10...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400

F09

Speed rpm : 1100
Del.quantity cm3/ : 210.0...213.0
1000 s: (207.0...216.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 800
Del.quantity cm3/ : 222.0...226.0
1000 s: (219.0...229.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 128.0...130.0
1000 s: (125.0...133.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 210.0...230.0
1000 s: (206.0...234.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 t 1
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 917
 Injection pump
 Pump designation : PES6P120A720LS7238
 EP type number : 0 412 726 852
 Governor
 Governor design. : RQ300/1100PA1010-1
 Governor no. : 0 421 801 597

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 hLA

1st version kW : 220.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 14.00...14.20
 Del. quantity cm³/ : 21.3...21.5
 100 s: (21.0...21.8)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.5
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 600
 Del. quantity : 213.0...215.0
 1000 : (210.0...218.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
1st rack travel in: 13.60
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.3

Testing:

Speed rpm : 200
Minimum rack trave: 8.20
Speed rpm : 300
Rack travel in mm : 6.00...6.60
Rack travel in mm : 2.00
Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 14.60...14.80
2nd speed rpm : 700
Rack travel in m: 14.80...15.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 600
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600
1st pressure hPa : 250
Rack travel in m: 12.20...12.40
2nd pressure hPa : 400
Rack travel in m: 13.60...13.80
3rd pressure hPa : 800
Rack travel in m: 14.20...14.40
4th pressure hPa : -
Rack travel in m: 11.70...12.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

F11

Aneroid pressure h: 1400
Speed rpm : 1100
Del.quantity cm3/ : 229.0...232.0
1000 s: (226.0...235.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 700
Del.quantity cm3/ : 238.0...242.0
1000 s: (235.0...245.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 154.0...156.0
1000 s: (151.0...159.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.60
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 220.0...240.0
1000 s: (216.0...244.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 t 2
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 918
 Injection pump
 Pump designation : PES6P120A720LS7238
 EP type number : 0 412 726 852
 Governor
 Governor design. : RQ300/1100PA1013
 Governor no. : 0 421 801 599

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 hLA

1st version kW : 220.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.00...14.20

Del.quantity cm³/ : 21.3...21.5

100 s: (21.0...21.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.2...6.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 600

Del.quantity : 213.0...215.0

1000 : (210.0...218.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.60
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 200
Minimum rack travel: 8.40
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 14.60...14.80
2nd speed rpm : 700
Rack travel in m: 14.80...15.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 600
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600
1st pressure hPa : 250
Rack travel in m: 12.20...12.40
2nd pressure hPa : 400
Rack travel in m: 13.60...13.80
3rd pressure hPa : 800
Rack travel in m: 14.20...14.40
4th pressure hPa : 890
Rack travel in m: 14.50...14.70
5th pressure hPa : -
Rack travel in m: 11.70...12.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400
Speed rpm : 1100
Del.quantity cm3/ : 229.0...232.0
1000 s: (226.0...235.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1400
Speed rpm : 700
Del.quantity cm3/ : 238.0...242.0
1000 s: (235.0...245.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 148.0...150.0
1000 s: (145.0...153.0)
Spread cm3 : -
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 220.0...240.0
1000 s: (216.0...244.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 u 2
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 919
 Injection pump
 Pump designation : PES6P120A720LS7237
 EP type number : 0 412 726 851
 Governor
 Governor design. : RQ300/1100PA1013-1
 Governor no. : 0 421 801 603

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 hA

1st version kW : 184.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.00...12.20

Del.quantity cm³/ : 16.3...16.5

100 s: (16.0...16.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.8...6.4

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 500

Del.quantity : 163.0...165.0

1000 : (160.0...168.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.30
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 200
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 5.80...6.40
Rack travel in mm : 2.00
Speed rpm : 370...410

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 500
Rack travel mm : 12.00...12.20

Measurement

Speed 1/min : 600
1st pressure hPa : 300
Rack travel in m: 11.60...11.80
2nd pressure hPa : 600
Rack travel in m: 12.20...12.40
3rd pressure hPa : 1100
Rack travel in m: 12.80...13.00
4th pressure hPa : -
Rack travel in m: 11.70...12.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400
Speed rpm : 1100
Del.quantity cm³/ : 199.0...201.0
1000 s: (196.0...203.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 139.0...141.0
1000 s: (136.0...144.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 t 3
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 746 922
 Injection pump
 Pump designation : PES6P120A720LS7238
 EP type number : 0 412 726 852
 Governor
 Governor design. : RQ300/1100PA1008
 Governor no. : 0 421 801 591

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 hLA

1st version kW : 220.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.00...14.20

Del.quantity cm³/ : 21.3...21.5

100 s: (21.0...21.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.2...6.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 600

Del.quantity : 213.0...215.0

1000 : (210.0...218.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:
1st rack travel in: 13.60
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:
Speed rpm : 200
Minimum rack travel: 8.40
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 370...410

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 600
Rack travel mm : 14.00...14.20

Measurement
Speed 1/min : 600

1st pressure hPa : 250
Rack travel in m: 12.20...12.40
2nd pressure hPa : 400
Rack travel in m: 13.60...13.80
3rd pressure hPa : 800
Rack travel in m: 14.20...14.40
4th pressure hPa : 890
Rack travel in m: 14.50...14.70
5th pressure hPa : -
Rack travel in m: 11.50...11.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1400
Speed rpm : 1100
Del. quantity cm³/ : 229.0...232.0
1000 s: (226.0...235.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 147.0...149.0
1000 s: (144.0...152.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.60
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 220.0...240.0
1000 s: (216.0...244.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 c 3
 Edition : 27.05.91
 Replaces : 22.3.91
 Test oil : ISO-4113

Combination no. : 0 402 776 806

Injection pump
 Pump designation : PES6P120A720LS7120
 EP type number : 0 412 726 803
 Governor
 Governor design. : RSV350...1050POA529
 -3
 Governor no. : 0 421 833 317

Customer spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 A

1st version kW : 213.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 14.00...14.20

Del.quantity cm³/ : 20.1...20.3

100 s: (19.8...20.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 650

Del.quantity : 201.0...203.0

1000 : (198.0...206.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 41...49

Testing:

1st rack travel in: 12.30
Speed rpm : 1080...1085
2nd rack travel in: 4.00
Speed rpm : 1160...1173
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7
Speed rpm : 350
Rack travel in mm : 5.60...5.80

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 13.30...13.50
2nd speed rpm : 950
Rack travel in m: 13.70...13.90
3rd speed rpm : 875
Rack travel in m: 14.20...14.40
4th speed rpm : 750
Rack travel in m: 14.70...14.90

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 650
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.20...13.40
3rd pressure hPa : 850
Rack travel in m: 14.30...14.50
4th pressure hPa : -
Rack travel in m: 11.30...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1030

Del.quantity cm3/ : 190.0...193.0
1000 s: (187.0...196.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 750
Del.quantity cm3/ : 214.0...219.0
1000 s: (211.0...222.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 142.0...144.0
1000 s: (139.0...147.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 1080...1085

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 c 5
 Edition : 27.05.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 776 806T3
 Injection pump
 Pump designation : PES6P12QA720LS7120
 EP type number : 0 412 726 803
 Governor
 Governor design. : RSV350...1050POA529
 -3
 Governor no. : 0 421 833 317

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 A

1st version kW : 213.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 14.00...14.20

Del.quantity cm³/ : 20.2...20.4

100 s: (19.9...20.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 650

Del.quantity : 202.0...204.0

1000 : (199.0...207.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 41...49

Testing:

1st rack travel in: 12.30
Speed rpm : 1080...1085
2nd rack travel in: 4.00
Speed rpm : 1160...1173
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7
Speed rpm : 350
Rack travel in mm : 5.60...5.80

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 13.30...13.50
2nd speed rpm : 950
Rack travel in m: 13.70...13.90
3rd speed rpm : 875
Rack travel in m: 14.20...14.40
4th speed rpm : 750
Rack travel in m: 14.70...14.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 650
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600
1st pressure hPa : 300
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.20...13.40
3rd pressure hPa : 850
Rack travel in m: 14.30...14.50
4th pressure hPa : -
Rack travel in m: 11.30...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1030

Del.quantity cm3/ : 194.0...197.0
1000 s: (191.0...200.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 750
Del.quantity cm3/ : 219.0...224.0
1000 s: (216.0...227.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 1080...1085

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a95
 Edition : 16.01.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 9 400 083 449DA

Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1100A2C2209
 R
 Governor no. : 9 420 083 201

Cust. part no. : 3354634-VERSAO30

Customer-spec. information
 Customer : CUMMINS

Engine : 6 CT 8.3

1st version kw : 160.3
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 11.5...11.7

100 s: (11.3...11.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm³/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 115.0...117.0

1000 : (113.0...119.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 90...98

Testing:

1st rack travel in: 10.80
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1330...1360
4th rack travel in: 1500
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 62...70
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.30
Rack travel in mm : 2.00
Speed rpm : 540...600

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.80...11.90
2nd speed rpm : 500
Rack travel in m: 11.80...12.00
5th speed rpm : 400
Rack travel in m: 12.20...12.70

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...149.0
1000 s: (132.0...152.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 18.0...22.0
1000 s: (15.5...24.5)

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:
Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 e
 Edition : 03.06.91
 Replaces : 1.9.88
 Test oil : ISO-4113

Combination no. : 9 400 085 288

Injection pump
 Pump designation : PES6A90D410RS2596-1
 EP type number : 9 400 084 008
 Governor
 Governor design. : RQV300...1300AB1066-3L
 Governor no. : 9 420 080 230

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 A

1st version kW : 127.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 13.10...13.20

Del.quantity cm³/ : 8.6...8.7
 100 s : (8.4...8.9)

Spread cm³ : 0.3
 100 s : (0.5)

2nd speed rpm : 300.0
 Rack travel in mm : 8.4...8.6
 Del.quantity cm³/ : 1.0...1.4
 100 s : (0.8...1.6)

Spread cm³ : 0.2
 100 s : (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1375
 travel mm : 8.40...8.50
 2nd speed rpm : 300
 travel mm : 0.90...1.30
 3rd speed rpm : 500
 travel mm : 2.20...2.60
 4th speed rpm : 800
 travel mm : 4.30...4.70
 5th speed rpm : 1100
 travel mm : 6.10...6.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1375
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1300
 Aneroid pressure h: 1000
 Del.quantity : 86.0...87.0
 1000 : (84.0...89.0)

Spread cm³ : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 108...116

Testing:
1st rack travel in: 12.10
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1470...1500
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 60...68

Testing:
Speed rpm : 100
Minimum rack travel: 10.00
Speed rpm : 300
Rack travel in mm : 8.40...8.60

CONSTANT REGULATION
Speed rpm : 590...660

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 13.10...13.20
2nd speed rpm : 800
Rack travel in m: 14.10...14.20
3rd speed rpm : 1000
Rack travel in m: 13.90...14.10
4th speed rpm : 1150
Rack travel in m: 13.30...13.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 14.10...14.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.80...12.90
2nd pressure hPa : 750
Rack travel in m: 13.90...14.00
3rd pressure hPa : 650

Rack travel in m: 13.20...13.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm³/ : 89.0...91.0
1000 s: (86.5...93.5)
Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm³/ : 90.0...92.0
1000 s: (87.5...94.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 66.5...68.5
1000 s: (64.5...70.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 71.0...81.0
1000 s: (68.0...84.0)
Rack travel in mm : 14.70...15.70

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 g 2
 Edition : 16.01.91
 Replaces : 24.11.89
 Test oil : ISO-4113

Combination no. : 9 400 085 310

Injection pump
 Pump designation : PES6A95D410RS2772
 EP type number : 9 400 084 018
 Governor
 Governor design. : RQV300...1300AB1066-8L
 Governor no. : 9 420 080 279

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 155.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 006

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

Rack travel in mm : 9.00...12.00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.08)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 9.8...10.0
 100 s : (9.6...10.2)

Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.9...7.1
 Del. quantity cm³/ : 0.8...1.4
 100 s : (0.6...1.6)

Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30

2nd speed rpm : 500
 travel mm : 2.30...2.80

3rd speed rpm : 750
 travel mm : 4.10...4.30

4th speed rpm : 1500
 travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1500
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1300
 Aneroid pressure h: 700
 Del. quantity : 98.0...100.0
 1000 : (96.0...102.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 10.10
Speed rpm : 1360...1370
2nd rack travel in: 4.00
Speed rpm : 1490...1520
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.90...7.10

CONSTANT REGULATION
Speed rpm : 420...550

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.10...11.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 450
Rack travel in m: 10.60...10.70
3rd pressure hPa : 300
Rack travel in m: 9.90...10.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm³/ : 86.0...89.0
1000 s: (83.5...91.5)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 59.5...61.5
1000 s: (57.5...63.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.10
Speed rpm : 1360...1370

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...90.0
1000 s: (-)
Rack travel in mm : 13.60...13.80

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 6,6 k 1
Edition : 16.01.91
Replaces : 26.3.90
Test oil : ISO-4113
Combination no. : 9 400 085 312
Injection pump
Pump designation : PES6A95D410RS2742
EP type number : 9 400 084 011
Governor
Governor design. : RQV350...1300AB1220-5L
Governor no. : 9 420 080 280

Customer-spec. information
Customer : FNH

Engine : 6.6 L
1st version kW : 139.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
Overflow valve : 1 417 413 047
Inlet press., bar : 1.50
Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 3.15...3.25 : (3.10...3.30)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1300
Rack travel in mm : 13.20...13.30
Del. quantity cm3/ : 10.1...10.3
100 s: (9.9...10.6)
Spread cm3 : 0.3
100 s: (0.6)
2nd speed rpm : 350.0
Rack travel in mm : 6.0...6.2
Del. quantity cm3/ : 1.5...2.1
100 s: (1.3...2.2)
Spread cm3 : 0.3
100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1450
travel mm : 8.50...8.60
2nd speed rpm : 350
travel mm : 1.10...1.80
3rd speed rpm : 500
travel mm : 2.70...3.10
4th speed rpm : 700
travel mm : 3.50...3.90
5th speed rpm : 1000
travel mm : 4.90...5.30

GUIDE SLEEVE POSITION

Control-lever position Degree: -1
Speed rpm : 1540
Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1300
Aneroid pressure h: 900
Del. quantity : 101.5...103.5
1000 : (99.0...106.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:
1st rack travel in: 12.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1490...1520
4th rack travel in: 1630
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 65...73

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.00...6.20

CONSTANT REGULATION
Speed rpm : 370...440

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.20...13.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.10...10.40
2nd pressure hPa : 380
Rack travel in m: 11.00...11.30
3rd pressure hPa : 530
Rack travel in m: 12.80...12.90

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 800
Del. quantity cm³/ : 99.5...103.5
1000 s: (97.5...105.5)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 65.5...67.5
1000 s: (63.0...70.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 155.0...175.0
1000 s: (152.0...178.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.00...6.20
Del. quantity cm³/ : 15.0...21.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 g 3
 Edition : 02.08.91
 Replaces : 26.3.90
 Test oil : ISO-4113

Combination no. : 9 400 085 315

Injection pump
 Pump designation : PES6A95D410RS2772
 EP type number : 9 400 084 018
 Governor
 Governor design. : RQV300...1300AB1066-9L
 Governor no. : 9 420 080 282

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 A

1st version kW : 125.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 006

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

G02

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 8.9...9.1
 100 s : (8.7...9.3)

Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.9...7.1
 Del. quantity cm³/ : 0.8...1.4
 100 s : (0.6...1.6)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30
 2nd speed rpm : 500
 travel mm : 2.30...2.80
 3rd speed rpm : 750
 travel mm : 4.10...4.30
 4th speed rpm : 1500
 travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1500
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1300
 Aneroid pressure h: 700
 Del. quantity : 89.0...91.0
 1000 : (87.0...93.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 9.40
Speed rpm : 1360...1370
2nd rack travel in: 4.00
Speed rpm : 1490...1520
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.90...7.10

CONSTANT REGULATION
Speed rpm : 420...550

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 10.40...10.50
2nd speed rpm : 800
Rack travel in m: 10.90...11.00
4th speed rpm : 1000
Rack travel in m: 10.60...10.80

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 10.90...11.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.30
2nd pressure hPa : 460
Rack travel in m: 10.10...10.20
3rd pressure hPa : 300
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

G03

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm³/ : 86.0...89.0
1000 s: (83.5...91.5)
Aneroid pressure h: 700
Speed rpm : 1000
Del.quantity cm³/ : 88.0...91.0
1000 s: (85.5...93.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 50.0...52.0
1000 s: (48.0...54.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.40
Speed rpm : 1360...1370

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...90.0
1000 s: (-)
Rack travel in mm : 13.60...13.80

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 g 4
 Edition : 02.08.91
 Replaces : 3.7.90
 Test oil : ISO-4113
 Combination no. : 9 400 085 317
 Injection pump
 Pump designation : PES6A95D410RS2772
 EP type number : 9 400 084 018
 Governor
 Governor design. : RQV300...1300AB1066-6L
 Governor no. : 9 420 080 265

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 A

1st version kW : 125.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 006

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.9...7.1
 Del.quantity cm³/ : 0.8...1.4
 100 s: (0.6...1.6)

Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30
 2nd speed rpm : 500
 travel mm : 2.30...2.80
 3rd speed rpm : 750
 travel mm : 4.10...4.30
 4th speed rpm : 1500
 travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1500
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1300
 Aneroid pressure h: 700
 Del.quantity : 89.0...91.0
 1000 : (87.0...93.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 9.40
Speed rpm : 1360...1370
2nd rack travel in: 4.00
Speed rpm : 1490...1520
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.90...7.10

CONSTANT REGULATION
Speed rpm : 420...550

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 10.40...10.50
2nd speed rpm : 800
Rack travel in m: 10.90...11.00
4th speed rpm : 1000
Rack travel in m: 10.60...10.80

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 10.90...11.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.30
2nd pressure hPa : 460
Rack travel in m: 10.10...10.20
3rd pressure hPa : 300
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

G05

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm³/ : 86.0...89.0
1000 s: (83.5...91.5)
Aneroid pressure h: 700
Speed rpm : 1000
Del.quantity cm³/ : 88.0...91.0
1000 s: (85.5...93.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 50.0...52.0
1000 s: (48.0...54.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1360...1370

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...90.0
1000 s: (-)
Rack travel in mm : 13.60...13.80

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 6,6 p 1
 Edition : 26.06.91
 Replaces : 9.4.91
 Test oil : ISO-4113
 Combination no. : 9 400 085 326
 Injection pump
 Pump designation : PES6A95D41ORS2802
 EP type number : 9 400 084 025
 Governor
 Governor design. : RQV350...1300AB1220-6L
 Governor no. : 9 420 080 308

Customer-spec. information
 Customer : FORD (FNH)

Engine : 6.6 L - TC

1st version kW : 139.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
 : (3.10...3.30)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 13.20...13.30

Del. quantity cm³/ : 10.1...10.3

100 s: (9.9...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.0...6.2

Del. quantity cm³/ : 1.5...2.1

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1450

travel mm : 8.50...8.60

2nd speed rpm : 350

travel mm : 1.10...1.80

3rd speed rpm : 500

travel mm : 2.70...3.10

4th speed rpm : 700

travel mm : 3.50...3.90

5th speed rpm : 1000

travel mm : 4.90...5.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1540

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300
Aneroid pressure h: 900
Del.quantity : 101.5...103.5
1000 : (99.0...106.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:

1st rack travel in: 12.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1490...1520
4th rack travel in: 1630
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 65...73

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.00...6.20

CONSTANT REGULATION

Speed rpm : 370...440

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...11.00
2nd pressure hPa : 350
Rack travel in m: 11.20...11.50
3rd pressure hPa : 500
Rack travel in m: 12.60...12.70

START CUT-OUT

Speed 1/min : 290 (310)

G07

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 800
Del.quantity cm³/ : 99.5...103.5
1000 s: (97.5...105.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 71.0...73.0
1000 s: (68.5...75.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 155.0...175.0
1000 s: (152.0...178.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 15.0...21.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,9 e
 Edition : 2.8.91
 Replaces : 16.1.91
 Test oil : ISO-4113
 Combination no. : 9 400 085 328
 Injection pump
 Pump designation : PES4A90D32ORS2798
 EP type number : 9 400 084 021
 Governor
 Governor design. : RS350/1400A2B2255R
 Governor no. : 9 420 083 247

Customer-spec. information
 Customer : MWM

Engine : TD 229 EC 4

1st version kW : 90.8
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 046

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.65...2.75
 : (2.60...2.80)
 Rack travel in mm : 9.00...12.00

G08

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 12.80...12.90

Del.quantity cm³/ : 9.8...9.9
 100 s: (9.6...10.1)

Spread cm³ : 0.3
 100 s: (0.5)

2nd speed rpm : 350.0
 Rack travel in mm : 4.9...5.1
 Del.quantity cm³/ : 0.6...1.2
 100 s: (0.4...1.4)
 Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Aneroid pressure h: 800
 Del.quantity : 98.5...99.5
 1000 : (96.5...101.5)
 Spread cm³ : 3.00
 1000 : (5.00)

RATED SPEED

1st version

Control Lever
position degrees: 62...70

Testing:
1st rack travel in: 11.80
Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1545...1575
4th rack travel in: 1700
Speed rpm : 0.30...1.70

LOW IDLE 1
Control Lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0

Testing:
Speed rpm : 250
Minimum rack travel: 6.40
Speed rpm : 350
Rack travel in mm : 4.90...5.10
Rack travel in mm : 3.00
Speed rpm : 400...460
Speed rpm : 800
Maximum rack travel: 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 12.80...12.90
2nd speed rpm : 800
Rack travel in m: 12.80...13.00
4th speed rpm : 550
Rack travel in m: 12.80...13.00
5th speed rpm : 400
Rack travel in m: 14.80...15.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 800
Rack travel mm : 12.80...13.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.20
2nd pressure hPa : 180
Rack travel in m: 10.80...10.90
3rd pressure hPa : 350
Rack travel in m: 12.10...12.40

FUEL DELIVERY CHARACTERISTICS

G09

1st version
Aneroid pressure h: 800
Speed rpm : 800
Del.quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 45.5...47.5
1000 s: (43.5...49.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.00...21.00

Remarks:

Dimension H = 21.9...22.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 6,5 a
 Edition : 03.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 085 336
 Injection pump
 Pump designation : PES6A95D410RS2812
 EP type number : 9 400 084 028
 Governor
 Governor design. : RQV350...1400AB1261L
 Governor no. : 9 420 080 307

Customer-spec. information
 Customer : MWM

Engine : D 610 / X-10

1st version kW : 110.7
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.75...2.85
 : (2.70...2.90)
 Rack travel in mm : 9.00...12.00

G10

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 1.50...2.50

BASIC SETTING

1st speed rpm : 1400
 Rack travel in mm : 10.20...10.30
 Del. quantity cm³/ : 7.6...7.8
 100 s: (7.4...8.0)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 5.6...5.8
 Del. quantity cm³/ : 1.0...1.4
 100 s: (0.8...1.5)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 1350
 travel mm : 7.10...7.30
 2nd speed rpm : 300
 travel mm : 0.80...1.30
 3rd speed rpm : 550
 travel mm : 2.50...3.00
 4th speed rpm : 800
 travel mm : 3.70...4.20
 5th speed rpm : 1500
 travel mm : 8.30...8.80

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1490
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1400
Del. quantity : 76.5...78.5
1000 : (74.5...80.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 109...117

Testing:
1st rack travel in: 9.20
Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1535...1565
4th rack travel in: 1700
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 64...72

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 350
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION
Speed rpm : 350...500

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 10.20...10.30
2nd speed rpm : 700
Rack travel in m: 10.50...10.60
3rd speed rpm : 1000
Rack travel in m: 10.50...10.60
4th speed rpm : 1300
Rack travel in m: 10.20...10.30

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del. quantity cm³/ : 66.5...69.5
1000 s: (64.0...72.0)
Speed rpm : 1000
Del. quantity cm³/ : 76.5...79.5
1000 s: (74.0...82.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 145.0...159.0
1000 s: (142.0...162.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.60...5.80
Del. quantity cm³/ : 10.0...14.0
1000 s: (8.5...15.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : M/M 6,5 a 1
 Edition : 03.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 085 337
 Injection pump
 Pump designation : PES6A95D410RS2812
 EP type number : 9 400 084 028
 Governor
 Governor design. : RQV350...1300AB1260L
 Governor no. : 9 420 080 306

Customer-spec. information
 Customer : M/M

Engine : TD 610 / X-10
 1st version kW : 143.9
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.75...2.85
 : (2.70...2.90)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4
 Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 1.50...2.50

BASIC SETTING

1st speed rpm : 1300
 Rack travel in mm : 12.20...12.30
 Del. quantity cm³/ : 9.9...10.1
 100 s: (9.7...10.3)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 350.0
 Rack travel in mm : 5.3...5.5
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.6...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
 travel mm : 7.10...7.30
 2nd speed rpm : 300
 travel mm : 0.80...1.30
 3rd speed rpm : 550
 travel mm : 2.50...3.00
 4th speed rpm : 800
 travel mm : 3.70...4.20
 5th speed rpm : 1500
 travel mm : 8.30...8.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1490
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1300
Aneroid pressure h: 800
Del.quantity : 99.0...101.0
1000 : (97.0...103.0)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 107...115

Testing:
1st rack travel in: 11.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1495...1525
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 63...71

Testing:
Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 350
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION
Speed rpm : 350...500

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 12.20...12.30
2nd speed rpm : 800
Rack travel in m: 12.50...12.60
3rd speed rpm : 850
Rack travel in m: 12.50...12.60
4th speed rpm : 1150
Rack travel in m: 12.20...12.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 800
Rack travel mm : 12.50...12.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.60...11.80
2nd pressure hPa : 480
Rack travel in m: 12.30...12.40
3rd pressure hPa : 400
Rack travel in m: 11.90...12.10

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 800
Speed rpm : 800
Del.quantity cm3/ : 99.5...102.5
1000 s: (97.0...105.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 80.0...82.0
1000 s: (78.0...84.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...159.0
1000 s: (142.0...162.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 7.5...11.5
1000 s: (6.0...13.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 k 1
 Edition : 26.06.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 9 400 085 343

Injection pump
 Pump designation : PES6A95D410RS2795
 EP type number : 9 400 084 020
 Governor
 Governor design. : RQV300...1400AB1065-18L
 Governor no. : 9 420 080 278

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366

1st version kW : 100.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 9.90...10.00

Del.quantity cm³/ : 6.8...7.0

100 s: (6.6...7.2)

Spread cm³ : 0.3

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.8...8.0

Del.quantity cm³/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm³ : 0.3

100 s: (0.3)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1500
 travel mm : 8.50...8.60

2nd speed rpm : 300
 travel mm : 0.80...1.30

3rd speed rpm : 500
 travel mm : 2.30...2.80

4th speed rpm : 750
 travel mm : 4.10...4.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1420

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400
 Del.quantity : 68.5...70.5

1000 : (66.5...72.5)

Spread cm³ : 3.50

1000 : (3.50)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 8.90
Speed rpm : 1460...1470
2nd rack travel in: 4.00
Speed rpm : 1545...1575
4th rack travel in: 1680
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 66...74

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 7.80...8.00

CONSTANT REGULATION
Speed rpm : 480...630

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del. quantity cm³/ : 50.0...53.0
1000 s: (47.5...55.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.90
Speed rpm : 1460...1470

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 78.0...90.0
1000 s: (75.0...93.0)
Rack travel in mm : 14.00...14.20

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 o 2
 Edition : 03.06.91
 Replaces : 16.1.91
 Test oil : ISO-4113

Combination no. : 9 400 087 318

Injection pump
 Pump designation : PE6P110A72ORS371-1
 EP type number : 0 411 816 166
 Governor
 Governor design. : RQ300/1050PA419-1
 Governor no. : 9 420 080 194

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 355-A

1st version kW : 210.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 004

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.90...12.00

Del.quantity cm³/ : 16.1...16.3

100 s: (15.9...16.5)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.4...2.0

100 s: (1.2...2.2)

Spread cm³ : 0.3

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 161.0...163.0

1000 : (159.0...165.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.90

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1150...1180

4th rack travel in: 1270

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.60

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 440...500

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm3/ : 152.0...156.0

1000 s: (149.0...159.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 120.0...145.0

1000 s: (116.0...149.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 6,6 n 1
 Edition : 26.06.91
 Replaces : 16.1.91
 Test oil : ISO-4113

Combination no. : 9 400 087 422

Injection pump
 Pump designation : PES6P100A720RS3235
 EP type number : 9 400 087 067
 Governor
 Governor design. : RQV350...1200PA923-5
 K
 Governor no. : 9 420 080 277

Customer-spec. information
 Customer : FORD (FNH)

Engine : 6.6 Ltr

1st version kW : 138.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 072

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 85...95

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 17...19

Prestroke mm : 3.45...3.55
 : (3.40...3.60)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 15.80...15.90

Del.quantity cm³/ : 16.3...16.5
 100 s: (16.0...16.8)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 350.0
 Rack travel in mm : 6.5...6.7
 Del.quantity cm³/ : 1.4...2.0
 100 s: (1.2...2.2)

Spread cm³ : 0.5
 100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1200
 travel mm : 8.90...9.10
 2nd speed rpm : 600
 travel mm : 5.40...5.60
 3rd speed rpm : 450
 travel mm : 3.80...4.00
 4th speed rpm : 350
 travel mm : 2.20...2.40
 5th speed rpm : 275
 travel mm : 1.10...1.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Aneroid pressure h: 1200
 Del.quantity : 163.5...165.5
 1000 : (160.5...168.5)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 14.80
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1410...1440
4th rack travel in: 1530
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 64...72

Testing:
Speed rpm : 275
Minimum rack travel: 8.30
Speed rpm : 350
Rack travel in mm : 6.50...6.70

CONSTANT REGULATION
Speed rpm : 390...460

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 15.80...15.90
2nd speed rpm : 750
Rack travel in m: 14.00...14.20
3rd speed rpm : 550
Rack travel in m: 13.00...13.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1200
Pressure hPa : 1200
Rack travel mm : 15.80...15.90

Measurement
Speed 1/min : 1200

1st pressure hPa : -
Rack travel in m: 9.70...10.10
2nd pressure hPa : 360
Rack travel in m: 11.40...11.50
3rd pressure hPa : 745
Rack travel in m: 14.20...14.60

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 750
Del.quantity cm³/ : 163.5...169.5
1000 s: (160.5...172.5)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 93.0...97.0
1000 s: (91.0...99.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.80
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...180.0
1000 s: (138.0...182.0)
Rack travel in mm : 13.10...13.90

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.50...6.70
Del.quantity cm³/ : 14.0...20.0
1000 s: (12.0...22.0)
Spread cm³ : 5.00
1000 s: (8.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 i 3
 Edition : 02.08.91
 Replaces : 8.5.91
 Test oil : ISO-4113

Combination no. : 9 400 087 429

Injection pump
 Pump designation : PES6P120A720RS3256-1
 EP type number : 9 400 087 077
 Governor
 Governor design. : RQV300...1300PA963
 Governor no. : 9 420 080 283

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM366 LA

1st version kW : 156.6
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 3.40...3.60

Del.quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 8.6...8.9

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.70

2nd speed rpm : 650
 travel mm : 3.80...4.30

3rd speed rpm : 1060
 travel mm : 5.60...6.10

4th speed rpm : 1358
 travel mm : 8.20...8.70

5th speed rpm : 1461
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1350

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control Lever
position degrees: 116...124

Testing:
1st rack travel in: 11.90
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 86...94

Testing:
Speed rpm : 200
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 8.80...9.20

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.60...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 11.10...11.30
2nd pressure hPa : 500
Rack travel in m: 12.10...12.30
3rd pressure hPa : 1000
Rack travel in m: 12.80...13.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1300
Del.quantity cm³/ : 157.0...159.0
1000 s: (154.0...162.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm³/ : 142.0...146.0
1000 s: (139.0...149.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 65.0...67.0
1000 s: (62.0...70.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

Remarks:

:
Start-of-delivery blocking at start of
delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 i 4
Edition : 02.08.91
Replaces : 8.5.91
Test oil : ISO-4113
Combination no. : 9 400 087 430
Injection pump
Pump designation : PES6P120A72ORS3256-1
EP type number : 9 400 087 077
Governor
Governor design. : RQV300...1300PA963-1
Governor no. : 9 420 080 284

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM366 LA

1st version kW : 171.5
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
: (4.25...4.45)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 3.40...3.60

Del.quantity cm3/ : 1.7...2.0
100 s: (1.4...2.3)

Spread cm3 : 0.2
100 s: (0.3)

2nd speed rpm : 300.0
Rack travel in mm : 8.6...8.9
Del.quantity cm3/ : 1.0...1.6
100 s: (0.7...1.9)
Spread cm3 : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.20...1.70
2nd speed rpm : 650
travel mm : 3.80...4.30
3rd speed rpm : 1060
travel mm : 5.60...6.10
4th speed rpm : 1358
travel mm : 8.20...8.70
5th speed rpm : 1461
travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1350
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 12.90
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1445...1475
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 86...94

Testing:
Speed rpm : 200
Minimum rack trave: 10.20
Speed rpm : 300
Rack travel in mm : 8.80...9.20

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.60...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 11.10...11.30
2nd pressure hPa : 700
Rack travel in m: 13.00...13.20
3rd pressure hPa : 1000
Rack travel in m: 13.70...13.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1300
Del.quantity cm³/ : 180.0...182.0
1000 s: (177.0...185.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm³/ : 164.0...168.0
1000 s: (161.0...171.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 65.0...67.0
1000 s: (62.0...70.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

Remarks:

:
Start-of-delivery blocking at start of
delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 i 2
 Edition : 02.08.91
 Replaces : 8.5.91
 Test oil : ISO-4113

Combination no. : 9 400 087 431

Injection pump
 Pump designation : PES6P120A72ORS3256
 EP type number : 9 400 087 071
 Governor
 Governor design. : RQV300...1300PA963-2
 Governor no. : 9 420 080 285

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM366 LA

1st version kW : 141.7
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 3.40...3.60

Del. quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 8.6...8.9

Del. quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.70

2nd speed rpm : 650
 travel mm : 3.80...4.30

3rd speed rpm : 1060
 travel mm : 5.60...6.10

4th speed rpm : 1358
 travel mm : 8.20...8.70

5th speed rpm : 1461
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1350

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 10.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1410...1440
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 86...94

Testing:
Speed rpm : 200
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 8.80...9.20

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.60...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 11.10...11.30
2nd pressure hPa : 700
Rack travel in m: 11.80...12.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

G25

Aneroid pressure h: 1000
Speed rpm : 1300
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm³/ : 114.0...118.0
1000 s: (111.0...121.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 65.0...67.0
1000 s: (62.0...70.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 90.0...110.0
1000 s: (86.0...114.0)

Remarks:

:
Start-of-delivery blocking at start of
delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 h1
 Edition : 02.08.91
 Replaces : 24.10.90
 Test oil : ISO-4113

Combination no. : 9 400 087 434

Injection pump
 Pump designation : PE6P120A32ORS3178
 EP type number : 0 411 826 752
 Governor
 Governor design. : RQV250...1025PA921-2
 Governor no. : 0 421 813 785

Customer-spec. information
 Customer : VOLVO

Engine : TD 122 FS

1st version kW : 287.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 010

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.00...14.10

Del. quantity cm³/ : 25.3...25.5

100 s : (25.0...25.8)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.8...5.1

Del. quantity cm³/ : 1.7...2.2

100 s : (1.5...2.5)

Spread cm³ : 0.5

100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.10...1.30

2nd speed rpm : 500
 travel mm : 4.10...4.90

3rd speed rpm : 700
 travel mm : 6.30...6.70

4th speed rpm : 900
 travel mm : 6.30...6.70

5th speed rpm : 1025
 travel mm : 7.30...7.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1200

Del.quantity : 253.0...255.0
1000 : (250.0...258.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control Lever
position degrees: 116...124

Testing:
1st rack travel in: 13.00
Speed rpm : 1055...1065
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control Lever
position degrees: 59...67

Testing:
Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 250
Rack travel in mm : 4.80...5.10

CONSTANT REGULATION

Speed rpm : 250...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 14.00...14.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 90
Rack travel in m: 10.50...10.60
3rd pressure hPa : 760
Rack travel in m: 13.50...13.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 163.0...165.0
1000 s: (160.0...168.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 1055...1065

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 270.0...310.0
1000 s: (266.0...314.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.80...5.10
Del.quantity cm³/ : 17.5...22.5
1000 s: (15.0...25.0)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

Start-of-delivery setting with ROBO
diaphragm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0q15
 Edition : 02.08.91
 Replaces : 24.10.90
 Test oil : ISO-4113

Combination no. : 9 400 087 437

Injection pump
 Pump designation : PE6P110A320RS3108Y
 EP type number : 0 411 816 729
 Governor
 Governor design. : RQV250...1100PA589-3
 Governor no. : 9 420 080 288

Customer-spec. information
 Customer : VOLVO

Engine : THD 100 EC

1st version kW : 180.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 13.8...14.0

100 s: (13.5...14.3)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0
 Rack travel in mm : 5.2...5.4
 Del.quantity cm3/ : 3.0...3.4
 100 s: (2.7...3.6)

Spread cm3 : 0.3
 100 s: (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.10...1.30
 2nd speed rpm : 500
 travel mm : 4.10...4.90
 3rd speed rpm : 700
 travel mm : 6.30...6.70
 4th speed rpm : 950
 travel mm : 6.30...6.70
 5th speed rpm : 1100
 travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1175
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 900
 Del.quantity : 138.0...140.0
 1000 : (135.0...143.0)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 10.10
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40

CONSTANT REGULATION

Speed rpm : 250...425

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 275
Rack travel in m: 9.90...10.00
3rd pressure hPa : 400
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 105.5...108.5
1000 s: (103.0...111.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 30.0...34.0
1000 s: (27.5...36.5)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 i 5
 Edition : 02.08.91
 Replaces : 8.5.91
 Test oil : ISO-4113
 Combination no. : 9 400 087 450
 Injection pump
 Pump designation : PES6P120A720RS3256
 EP type number : 9 400 087 071
 Governor
 Governor design. : RQV300...1300PA978
 Governor no. : 9 420 080 296

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OMB366 LA

1st version kW : 126.8
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 3.40...3.60

Del. quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 8.6...8.9

Del. quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.70

2nd speed rpm : 650

travel mm : 3.80...4.30

3rd speed rpm : 1060

travel mm : 5.60...6.10

4th speed rpm : 1358

travel mm : 8.20...8.70

5th speed rpm : 1461

travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1350

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm3 : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 10.80
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1410...1440
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 86...94

Testing:
Speed rpm : 200
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 8.80...9.20

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.40...10.60

Measurement
Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 10.90...11.10
2nd pressure hPa : 700
Rack travel in m: 11.60...11.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

H03

Aneroid pressure h: 1000
Speed rpm : 1300
Del.quantity cm3/ : 138.0...140.0
1000 s: (135.0...143.0)
Spread cm3 : 8.00
1000 s: (12.0)

Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm3/ : 118.0...122.0
1000 s: (115.0...125.0)
Spread cm3 : 8.00
1000 s: (12.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 61.0...63.0
1000 s: (58.0...66.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 90.0...110.0
1000 s: (86.0...114.0)

Remarks:

:

Start-of-delivery blocking at start of
delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 p
 Edition : 26.06.91
 Replaces : 16.1.91
 Test oil : ISO-4113

Combination no. : 9 400 087 451

Injection pump
 Pump designation : PES6P110A72ORS3272
 EP type number : 9 400 087 076
 Governor
 Governor design. : RQV350...1200PA863-1
 Governor no. : 9 420 080 300

Customer-spec. information
 Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 206.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 9 401 087 403

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
 x wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.65...4.75
 : (4.60...4.80)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 17.4...17.6

100 s: (17.2...17.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 6.1...6.3

Del.quantity cm³/ : 1.4...1.8

100 s: (1.1...2.0)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1360
 travel mm : 8.40...8.50

2nd speed rpm : 1000
 travel mm : 5.50...5.90

3rd speed rpm : 800
 travel mm : 4.40...4.80

4th speed rpm : 500
 travel mm : 2.60...3.00

5th speed rpm : 300
 travel mm : 0.90...1.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1505
 Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Aneroid pressure h: 1200

Del.quantity : 174.5...176.5
1000 : (172.5...178.5)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 96...104

Testing:

1st rack travel in: 12.50
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1370...1400
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 65...73

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.10...6.30

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 13.50...13.60
2nd speed rpm : 800
Rack travel in m: 14.00...14.10
3rd speed rpm : 850
Rack travel in m: 13.90...14.10
4th speed rpm : 1030
Rack travel in m: 13.50...13.60

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 14.00...14.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.20
2nd pressure hPa : 860

H05

Rack travel in m: 13.50...13.60
3rd pressure hPa : 540
Rack travel in m: 11.80...12.20

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 160.0...164.0
1000 s: (158.0...166.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 92.0...94.0
1000 s: (89.5...96.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (135.0...165.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.10...6.30
Del.quantity cm³/ : 14.0...18.0
1000 s: (11.5...20.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 q
 Edition : 02.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 087 455
 Injection pump
 Pump designation : PES6P110A72ORS3285
 EP type number : 9 400 087 078
 Governor
 Governor design. : RQV350...1200PA863
 -11
 Governor no. : 9 420 080 310

Customer-spec. information
 Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 179.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 2 417 413 057

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

HO6

Prestroke mm : 4.25...4.35
 : (4.20...4.40)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 14.50...14.60

Del. quantity cm³/ : 14.9...15.1

100 s: (14.7...15.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.2

Del. quantity cm³/ : 2.4...2.8

100 s: (2.1...3.0)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1360

travel mm : 8.40...8.50

2nd speed rpm : 1000

travel mm : 5.50...5.90

3rd speed rpm : 800

travel mm : 4.40...4.80

4th speed rpm : 500

travel mm : 2.60...3.00

5th speed rpm : 300

travel mm : 0.90...1.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1440

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700
Del. quantity : 149.5...151.5
1000 : (147.5...153.5)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 44...52

Testing:
1st rack travel in: 13.50
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1410...1440
4th rack travel in: 1520
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 13...21

Testing:
Speed rpm : 100
Minimum rack travel: 12.00
Speed rpm : 350
Rack travel in mm : 8.00...8.20

CONSTANT REGULATION
Speed rpm : 390...460

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 14.50...14.60
2nd speed rpm : 750
Rack travel in m: 15.00...15.10
3rd speed rpm : 910
Rack travel in m: 14.90...15.10
4th speed rpm : 1040
Rack travel in m: 14.50...14.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 15.00...15.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.00...12.20

H07

2nd pressure hPa : 430
Rack travel in m: 13.30...13.40
3rd pressure hPa : 532
Rack travel in m: 14.30...14.50

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 850
Del. quantity cm³/ : 134.5...138.5
1000 s: (132.5...140.5)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 72.0...74.0
1000 s: (70.0...76.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.50
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.20
Del. quantity cm³/ : 24.0...28.0
1000 s: (21.5...30.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a62
 Edition : 03.06.91
 Replaces : 13.5.91
 Test oil : ISO-4113

Combination no. : 9 400 230 111

Injection pump
 Pump designation : PES6A100D320/3RS2691
 -4

EP type number : 9 410 230 030
 Governor
 Governor design. : RSV450...1100AOC2190
 -4OR

Governer no. : 0 420 233 246

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT 830

1st version kw : 134.2
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

H08

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.20...11.30

Del.quantity cm³/ : 10.3...10.5
 100 s: (10.1...10.7)

Spread cm³ : 0.4
 100 s: (0.6)

2nd speed rpm : 450.0
 Rack travel in mm : 5.7...5.9
 Del.quantity cm³/ : 1.6...2.0
 100 s: (1.4...2.2)

Spread cm³ : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 103.5...105.5
 1000 : (101.5...107.5)

Spread cm³ : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 49...57

Testing:

1st rack travel in: 10.20
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1210...1240
3rd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 31...39
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 450
Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.20...11.30
2nd speed rpm : 750
Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 111.5...115.5
1000 s: (109.5...117.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 138.0...158.0
1000 s: (133.0...163.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.70...5.90

Del.quantity cm³/ : 16.5...20.5
1000 s: (14.5...22.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

:
Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 15,8 c2
Edition : 23.08.91
Replaces : 21.6.91
Test oil : ISO-4113
Combination no. : 0 400 649 188
Injection pump
Pump designation : PE10A95D610/4LS2452
EP type number : 0 410 699 998
Governor
Governor design. : RQV30C...1150AB988DL
Governor no. : 0 420 214 229

Customer-spec. information
Customer : KHD

Engine : F10L413F

1st version kW : 216.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Rack travel in mm : 9.00...12.00

H10

Firing order : 1-10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 9.1...9.2

100 s: (8.9...9.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.0...7.2

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.00...1.50

2nd speed rpm : 325
travel mm : 1.50...2.00

3rd speed rpm : 760
travel mm : 4.80...5.30

4th speed rpm : 1200
travel mm : 8.60...9.10

5th speed rpm : 1420
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 91.5...92.5

1000 : (89.5...94.5)

Spread cm³ : 3.00
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 9.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.00...10.10
2nd speed rpm : 975
Rack travel in m: 10.20...10.40
3rd speed rpm : 700
Rack travel in m: 10.50...10.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del. quantity cm³/ : 90.0...93.0
1000 s: (87.5...95.5)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

H11

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.00...7.20
Del. quantity cm³/ : 17.0...23.0
1000 s: (14.5...25.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 k 4
Edition : 23.08.91
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 676 177W
Injection pump
Pump designation : PE6A85D32ORS2546
EP type number : 0 410 686 943
Governor
Governor design. : RSV250...1300A1C2200
R
Governor no. : 0 420 233 201

Customer-spec. information
Customer : DAF

Engine : DF615

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
: (2.10...2.30)
Rack travel in mm : 7.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.50...9.60

Del. quantity cm³/ : 4.9...5.0

100 s: (4.7...5.2)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 250.0

Rack travel in mm : 8.3...8.5

Del. quantity cm³/ : 1.4...1.9

100 s: (1.2...2.1)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 49.0...50.0

1000 : (47.0...52.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 103...111

Testing:

1st rack travel in: 8.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1155...1185
3rd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1340
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 69...77
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 7.9
Speed rpm : 250
Rack travel in mm : 8.30...8.50
Rack travel in mm : 2.00
Speed rpm : 595...655

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.50...9.60
2nd speed rpm : 400
Rack travel in m: 9.70...9.90
3rd speed rpm : 300
Rack travel in m: 9.90...10.40

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 110.0...125.0
1000 s: (107.0...128.0)
Rack travel in mm : 19.50...21.00

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 k 5
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 676 177Y

Injection pump
 Pump designation : PE6A85D32ORS2546
 EP type number : 0 410 686 943
 Governor
 Governor design. : RSV250...1300A1C2200
 R
 Govenner no. : 0 420 233 201

Customer-spec. information
 Customer : DAF

Engine : DF615

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 4.9...5.0

100 s: (4.7...5.2)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 250.0

Rack travel in mm : 8.3...8.5

Del.quantity cm³/ : 1.4...1.9

100 s: (1.2...2.1)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 49.0...50.0

1000 : (47.0...52.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 103...111

Testing:

1st rack travel in: 8.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1155...1185
3rd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 69...77
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 7.9
Speed rpm : 250
Rack travel in mm : 8.30...8.50
Rack travel in mm : 2.00
Speed rpm : 595...655

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.50...9.60
2nd speed rpm : 400
Rack travel in m: 9.70...9.80
3rd speed rpm : 300
Rack travel in m: 9.90...10.40

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...125.0
1000 s: (107.0...128.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 i 8
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 676 180V
 Injection pump
 Pump designation : PE6A90D32ORS2547
 EP type number : 0 410 696 180
 Governor
 Governor design. : RSV250...1200A5C2203
 R
 Governor no. : 0 420 233 203

Customer-spec. information
 Customer : DAF

Engine : DT615

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test Lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.20...2.30
 : (2.15...2.35)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 10.20...10.30
 Del.quantity cm³/ : 6.0...6.1
 100 s: (5.8...6.3)
 Spread cm³ : 0.3
 100 s: (0.4)

2nd speed rpm : 250.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.3
 100 s: (0.7...1.5)
 Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Aneroid pressure h: 700
 Del.quantity : 60.5...61.5
 1000 : (58.5...63.5)
 Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 91...99

Testing:

1st rack travel in: 9.20
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1120...1150
3rd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1340
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 62...70
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.5
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.20...10.30
2nd speed rpm : 400
Rack travel in m: 10.40...10.50
3rd speed rpm : 300
Rack travel in m: 10.60...11.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 700
Rack travel mm : 10.20...10.30

Measurement

Speed 1/min : 1000

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 250
Rack travel in m: 10.50...10.60
3rd pressure hPa : 210
Rack travel in m: 10.00...10.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 51.5...53.5
1000 s: (49.0...56.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.20
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...145.0
1000 s: (132.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 9.0...13.0
1000 s: (7.0...15.0)
Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 i 9
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 676 180X
 Injection pump
 Pump designation : PE6A90D32ORS2547
 EP type number : 0 410 696 180
 Governor
 Governor design. : RSV250...1200A5C2203
 R
 Governor no. : 0 420 233 203

Customer-spec. information
 Customer : DAF

Engine : DT615

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.20...2.30
 : (2.15...2.35)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 10.20...10.30
 Del.quantity cm³/ : 6.0...6.1
 100 s: (5.8...6.3)
 Spread cm³ : 0.3
 100 s: (0.4)

2nd speed rpm : 250.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.3
 100 s: (0.7...1.5)
 Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Aneroid pressure h: 700
 Del.quantity : 60.5...61.5
 1000 : (58.5...63.5)
 Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 91...99

Testing:

1st rack travel in: 9.20
 Speed rpm : 1090...1100
 2nd rack travel in: 4.00
 Speed rpm : 1120...1150
 3rd rack travel in: 4.00
 Speed rpm : 1175...1205
 4th rack travel in: 1340
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
 position degrees: 62...70
 Setting point w/out bumper spring
 Speed rpm : 250
 Rack travel in mm : 5.5
 Speed rpm : 250
 Rack travel in mm : 5.40...5.60
 Rack travel in mm : 2.00
 Speed rpm : 585...645

TORQUE CONTROL

Torque control curve - 1st version
 1st speed rpm : 1000
 Rack travel in m: 10.20...10.30
 2nd speed rpm : 400
 Rack travel in m: 10.40...10.50
 3rd speed rpm : 300
 Rack travel in m: 10.60...11.10

Aneroid/Altitude
Compensator Test

1st version

Setting
 Speed rpm : 1000
 Pressure hPa : 700
 Rack travel mm : 10.20...10.30

Measurement

Speed 1/min : 1000

1st pressure hPa : -
 Rack travel in m: 9.80...10.00
 2nd pressure hPa : 250
 Rack travel in m: 10.50...10.60
 3rd pressure hPa : 210
 Rack travel in m: 10.00...10.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
 Speed rpm : 600
 Del.quantity cm3/ : 51.5...53.5
 1000 s: (49.0...56.0)

BREAKAWAY

1st version
 1mm rack travel less than
 full load rack tr: 9.20
 Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
 Del.quantity cm3/ : 135.0...145.0
 1000 s: (132.0...148.0)
 Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
 Rack travel in mm : 5.90...6.10
 Del.quantity cm3/ : 9.0...13.0
 1000 s: (7.0...15.0)
 Spread cm3 : 2.50
 1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 n 9
Edition : 30.08.91
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 676 185Y
Injection pump
Pump designation : PE6A95D410RS2575
EP type number : 0 410 696 984
Governor
Governor design. : 8SV250...1200A5C2198
-3L
Governor no. : 0 420 232 452
Cust. part no. : 0763026
Customer-spec. information
Customer : DAF
Engine : DH 825

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600
(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 7.50...10.50

H2O

Firing order : 1- 5- 3- 6- 2- 4
Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1000
Rack travel in mm : 9.90...10.00
Del. quantity cm³/ : 6.8...6.9
100 s: (6.6...7.1)
Spread cm³ : 0.3
100 s: (0.6)
2nd speed rpm : 250.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 0.7...1.1
100 s: (0.4...1.3)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del. quantity : 68.5...69.5
1000 : (66.5...71.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 100...108

Remarks:

Testing:

1st rack travel in: 8.90
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1145...1175
3rd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1375
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 73...81
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.6
Speed rpm : 250
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 650...710

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1040
Rack travel in m: 9.90...10.00
2nd speed rpm : 500
Rack travel in m: 10.60...10.70
3rd speed rpm : 850
Rack travel in m: 10.40...10.50
4th speed rpm : 940
Rack travel in m: 10.20...10.50

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 125.0...135.0
1000 s: (122.0...138.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 n10
Edition : 30.08.91
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 676 192Z

Injection pump
Pump designation : PE6A95D410RS2575
EP type number : 0 410 696 984
Governor
Governor design. : RSV250...750A7C2201-
1L
Governor no. : 0 420 232 563

Customer-spec. information
Customer : DAF

Engine : DH 825

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
Rack travel in mm : 7.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.20...13.30

Del. quantity cm³/ : 11.0...11.1

100 s: (10.8...11.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 0.7...1.3
100 s: (0.5...1.4)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del. quantity : 110.5...111.5
1000 : (108.5...113.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 104...112

Testing:

1st rack travel in: 12.20
Speed rpm : 900...905
2nd rack travel in: 4.00
Speed rpm : 940...955
4th rack travel in: 1090
Speed rpm : 0.30...1.40

LOW IDLE 1
Control Lever
position degrees: 71...79
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.1

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 250
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 265...325

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 7.0...13.0
1000 s: (5.5...14.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 j
 Edition : 21.08.91
 Replaces : 19.3.91
 Test oil : ISO-4113

Combination no. : 0 400 844 095

Injection pump
 Pump designation : PES4A95D410RS2809
 EP type number : 0 410 894 993
 Governor
 Governor design. : RQV300...1400AB1065-23L
 Governor no. : 0 420 212 227

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 364

1st version kw : 65.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 9.90...10.00

Del.quantity cm³/ : 6.5...6.6
 100 s: (6.3...6.8)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 8.4...8.6
 Del.quantity cm³/ : 0.8...1.2
 100 s: (0.5...1.4)

Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30

2nd speed rpm : 500
 travel mm : 2.30...2.80

3rd speed rpm : 750
 travel mm : 4.10...4.30

4th speed rpm : 1500
 travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1450
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Del.quantity : 65.0...66.0
 1000 : (63.0...68.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:
1st rack travel in: 8.90
Speed rpm : 1450...1460
2nd rack travel in: 4.00
Speed rpm : 1535...1565
4th rack travel in: 1670
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack travel: 9.60
Speed rpm : 300
Rack travel in mm : 8.40...8.60

CONSTANT REGULATION
Speed rpm : 550...700

TORQUE CONTROL
Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 9.90...10.00
2nd speed rpm : 400
Rack travel in m: 10.70...10.90
3rd speed rpm : 670
Rack travel in m: 10.50...10.70
4th speed rpm : 1060
Rack travel in m: 10.10...10.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 400
Del.quantity cm³/ : 48.0...51.0
1000 s: (45.5...53.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.90
Speed rpm : 1450...1460

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 14.80...15.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 j 1
 Edition : 21.08.91
 Replaces : 19.3.91
 Test oil : ISO-4113

Combination no. : 0 400 844 096

Injection pump
 Pump designation : PES4A95D410RS2809
 EP type number : 0 410 894 993
 Governor
 Governor design. : RQV300...1400AB1065-23L
 Governor no. : 0 420 212 227

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 364

1st version kW : 65.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 9.90...10.00

Del. quantity cm³/ : 6.5...6.6

100 s: (6.3...6.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.6

Del. quantity cm³/ : 0.8...1.2

100 s: (0.5...1.4)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.80...1.30

2nd speed rpm : 500

travel mm : 2.30...2.80

3rd speed rpm : 750

travel mm : 4.10...4.30

4th speed rpm : 1500

travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1450

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400

Del. quantity : 65.0...66.0

1000 : (63.0...68.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control Lever
position degrees: 111...119

Testing:
1st rack travel in: 8.90
Speed rpm : 1450...1460
2nd rack travel in: 4.00
Speed rpm : 1535...1565
4th rack travel in: 1670
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack travel: 9.60
Speed rpm : 300
Rack travel in mm : 8.40...8.60

CONSTANT REGULATION
Speed rpm : 550...700

TORQUE CONTROL
Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 9.90...10.00
2nd speed rpm : 400
Rack travel in m: 10.70...10.90
3rd speed rpm : 670
Rack travel in m: 10.50...10.70
4th speed rpm : 1060
Rack travel in m: 10.10...10.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 400
Del.quantity cm³/ : 48.0...51.0
1000 s: (45.5...53.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 1450...1460

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 14.80...15.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 a
 Edition : 21.08.91
 Replaces : 6.7.90
 Test oil : ISO-4113

Combination no. : 0 400 846 522

Injection pump
 Pump designation : PES6A90D410RS2667
 EP type number : 0 410 896 080
 Governor
 Governor design. : RQV300...1400AB1065-
 4L

Governer no. : 0 420 212 168

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 100.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1-5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 11.10...11.20

Del.quantity cm³/ : 6.3...6.4

100 s: (6.1...6.6)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 300.0

Rack travel in mm : 8.9...9.1

Del.quantity cm³/ : 0.9...1.3

100 s: (0.7...1.5)

Spread cm³ : 0.2

100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.80...1.30

2nd speed rpm : 600

travel mm : 2.40...4.00

3rd speed rpm : 650

travel mm : 3.70...4.20

4th speed rpm : 1450

travel mm : 8.40...8.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400

Del.quantity : 63.5...64.5

1000 : (61.5...66.5)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 108...116

Testing:

1st rack travel in: 10.10

Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1540...1570
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 74...82

Testing:
Speed rpm : 100
Minimum rack travel: 10.30
Speed rpm : 300
Rack travel in mm : 8.90...9.10

CONSTANT REGULATION
Speed rpm : 540...680

TORQUE CONTROL
Dimension a mm : 1.10
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 11.10...11.20
2nd speed rpm : 500
Rack travel in m: 12.20...12.40
3rd speed rpm : 900
Rack travel in m: 11.80...12.10
4th speed rpm : 1100
Rack travel in m: 11.40...11.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm³/ : 52.0...54.0
1000 s: (49.5...56.5)

Speed rpm : 900
Del.quantity cm³/ : 55.0...58.0
1000 s: (52.5...60.5)
1000 s: 80.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 17.00...17.40

Remarks:

:
Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 y 1
 Edition : 21.08.91
 Replaces : 18.6.91
 Test oil : ISO-4113

Combination no. : 0 400 846 580

Injection pump
 Pump designation : PES6A95D32ORS2779
 EP type number : 0 410 896 903
 Governor
 Governor design. : RQV350...1350AB1248-1R
 Governor no. : 0 420 213 121

Customer-spec. information
 Customer : NAVISTAR

Engine : DTA 360

1st version kw : 138.0
 Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder assembly : 1 688 901 110

Opening pressure, bar : 250...253

Orifice plate diameter mm : 0,5

Test lines : 1 680 750 008

Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

J02

Prestroke mm : 2.65...2.75
 : (2.60...2.80)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1350

Rack travel in mm : 12.30...12.40

Del.quantity cm³/ : 8.4...8.6
 100 s: (8.2...8.8)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 1.7...2.1
 100 s: (1.5...2.3)

Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
 travel mm : 7.30...7.50
 2nd speed rpm : 1460
 travel mm : 8.10...8.50
 3rd speed rpm : 550
 travel mm : 3.10...3.70
 4th speed rpm : 350
 travel mm : 1.30...1.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1350
 Aneroid pressure h: 900
 Del.quantity : 84.0...86.0
 1000 : (82.0...88.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...52

Testing:
1st rack travel in: 11.30
Speed rpm : 1390...1420
2nd rack travel in: 4.00
Speed rpm : 1525...1535
4th rack travel in: 1625
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 350...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.30...12.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 215
Rack travel in m: 10.00...10.10
3rd pressure hPa : 430
Rack travel in m: 11.30...11.70

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 67.0...71.0
1000 s: (65.0...73.0)

BREAKAWAY

J03

1st version
1mm rack travel less than
full load rack tr: 11.30
Speed rpm : 1390...1420

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...165.0
1000 s: (140.0...170.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 17.0...21.0
1000 s: (15.0...23.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks: : NAVISTAR #1816728C91

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 k 3
 Edition : 21.08.91
 Replaces : 2.5.90
 Test oil : ISO-4113

Combination no. : 0 400 866 141

Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1250AOC2216
 -3R
 Governor no. : 0 420 233 238

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT 8.3 ltr

1st version kW : 160.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

J04

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.00...12.10

Del.quantity cm³/ : 12.1...12.3

100 s: (11.9...12.5)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 5.4...5.6
 Del.quantity cm³/ : 1.7...2.1
 100 s: (1.4...2.3)
 Spread cm³ : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 121.0...123.0
 1000 : (119.0...125.0)
 Spread cm³ : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 52...60

Testing:

1st rack travel in: 11.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1355...1385
3rd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1450
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.40...5.60

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.00...12.10
2nd speed rpm : 750
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del. quantity cm³/ : 122.5...126.5
1000 s: (120.5...128.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.40...5.60
Del. quantity cm³/ : 17.0...21.0
1000 s: (14.5...23.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915979

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 o
 Edition : 21.08.91
 Replaces :
 Test oil : ISO-4113
 Combination no. : 0 400 866 151
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 -4
 EP type number : 9 410 230 030
 Governor
 Governor design. : RSV450...1100AOC2238
 R
 Governor no. : 0 420 233 254

Customer-spec. information
 Customer : C.D.C.

Engine : 6CT830

1st version kw : 151.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29
 Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 12.10...12.20
 Del.quantity cm3/ : 11.8...12.0
 100 s: (11.6...12.2)
 Spread cm3 : 0.4
 100 s: (0.6)

2nd speed rpm : 450.0
 Rack travel in mm : 5.4...5.6
 Del.quantity cm3/ : 1.6...2.0
 100 s: (1.3...2.2)
 Spread cm3 : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 900
 Del.quantity : 118.5...120.5
 1000 : (116.5...122.5)
 Spread cm3 : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 42...50

Testing:

1st rack travel in: 11.10
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1195...1205
3rd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 450
Rack travel in mm : 5.40...5.60

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.10...12.20
2nd speed rpm : 750
Rack travel in m: 13.20...13.40

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.20...13.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.60
2nd pressure hPa : 385
Rack travel in m: 11.40...11.50
3rd pressure hPa : 560
Rack travel in m: 12.60...13.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 750
Del.quantity cm3/ : 133.0...137.0
1000 s: (131.0...139.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 78.0...80.0
1000 s: (76.0...82.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915996

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a96
 Edition : 21.08.91
 Replaces : 8.7.91
 Test oil : ISO-4113

Combination no. : 0 400 866 170

Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1100ADC2190
 -53R
 Governor no. : 0 420 233 284

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT 8.3ltr

1st version kW : 173.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

J08

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.70...10.80

Del.quantity cm³/ : 9.8...10.0

100 s: (9.6...10.2)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 98.0...100.0

1000 : (96.0...102.0)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 9.70
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1235...1245
3rd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.60...5.80

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.60...5.80
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:
: C.D.C. # 3919767

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 w 1
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 173
 Injection pump
 Pump designation : PES6A85D410/3RS2611
 EP type number : 0 410 886 902
 Governor
 Governor design. : RSV325...1200A0C2148
 -1L
 Governor no. : 0 420 232 567

Customer-spec. information
 Customer : KHD

Engine : F6L913 H

1st version kW : 85.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200
 Rack travel in mm : 10.40...10.50
 Del. quantity cm³/ : 6.1...6.2
 100 s: (5.9...6.4)
 Spread cm³ : 0.3
 100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 8.4...8.6
 Del. quantity cm³/ : 0.8...1.4
 100 s: (0.6...1.6)
 Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del. quantity : 61.5...62.5
 1000 : (59.5...64.5)
 Spread cm³ : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 101...109

Testing:
 1st rack travel in: 9.40
 Speed rpm : 1240...1250
 2nd rack travel in: 4.00
 Speed rpm : 1295...1325
 4th rack travel in: 1460

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 76...84

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 8.5

Speed rpm : 325

Rack travel in mm : 8.40...8.60

Rack travel in mm : 2.00

Speed rpm : 450...510

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 10.40...10.50

2nd speed rpm : 500

Rack travel in m: 11.10...11.30

4th speed rpm : 1000

Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del. quantity cm³/ : 54.0...56.0

1000 s: (51.5...58.5)

Speed rpm : 1000

Del. quantity cm³/ : 60.0...62.0

1000 s: (57.5...64.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 115.0...125.0

1000 s: (112.0...128.0)

Rack travel in mm : 17.60...18.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o10
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 332Z
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300AOC2206
 R
 Governor no. : 0 420 233 204

Cust. part no. : 0082297/0

Customer-spec. information
 Customer : DAF

Engine : DNTD 620

1st version kW : 110.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 10.60...10.70

Del.quantity cm³/ : 6.0...6.1
 100 s: (5.8...6.3)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.3...6.5
 Del.quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 650
 Del.quantity : 60.5...61.5
 1000 : (58.5...63.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control Lever
position degrees: 89...97

Testing:

1st rack travel in: 9.10
Speed rpm : 1070...1080
2nd rack travel in: 4.00
Speed rpm : 1110...1140
3rd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1290
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1025
Rack travel in m: 10.10...10.30
2nd speed rpm : 500
Rack travel in m: 10.60...10.70
4th speed rpm : 875
Rack travel in m: 10.40...10.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1025
Del.quantity cm³/ : 61.0...63.0
1000 s: (58.5...65.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1070...1080

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 c 2
 Edition : 21.08.91
 Replaces : 3.3.89
 Test oil : ISO-4113

Combination no. : 0 400 876 335

Injection pump
 Pump designation : PES6A90D410RS2710
 EP type number : 0 410 896 082
 Governor
 Governor design. : RSV350...1200A1C1154

Governer no. : 0 420 232 468

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 74.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 5.1...5.2

100 s: (4.9...5.4)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 370.0

Rack travel in mm : 7.9...8.5

Del.quantity cm³/ : 1.0...1.2

100 s: (0.8...1.4)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 51.0...52.0

1000 : (49.0...54.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 109...117

Testing:

1st rack travel in: 8.30

Speed rpm : 1240...1245

2nd rack travel in: 4.00

Speed rpm : 1267...1280

3rd rack travel in: 4.00

Speed rpm : 1300...1330
4th rack travel in: 1400
Speed rpm : 0.30...1.40
5th rack travel in: 1255...1265
Speed rpm : 8.30

LOW IDLE 1

Control lever
position degrees: -3
Setting point w/out bumper spring
Speed rpm : 370
Rack travel in mm : 8.2

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 370
Rack travel in mm : 8.10...8.30
Rack travel in mm : 2.00
Speed rpm : 460...520

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 9.30...9.40
2nd speed rpm : 600
Rack travel in m: 10.00...10.20
3rd speed rpm : 900
Rack travel in m: 9.80...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 41.0...43.0
1000 s: (38.5...45.5)
Speed rpm : 900
Del.quantity cm3/ : 46.0...49.0
1000 s: (43.5...51.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1240...1245

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 85.0...95.0
1000 s: (82.0...98.0)
Rack travel in mm : 16.80...17.20

LOW IDLE

Speed rpm : 370
Rack travel in mm : 7.90...8.50
Del.quantity cm3/ : 10.0...12.0
1000 s: (8.0...14.0)
Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

APPLICATION

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 e 1
 Edition : 21.08.91
 Replaces : 17.7.90
 Test oil : ISO-4113

Combination no. : 0 400 876 372

Injection pump
 Pump designation : PES6A100D410RS2764-1
 EP type number : 0 410 806 007
 Governor
 Governor design. : RSV600...1100A2C2161
 -7L
 Governor no. : 0 420 232 540

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466AZ003

1st version kW : 164.0
 Rated speed : 1100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 190...200

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
 : (2.40...2.60)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.10...13.20

Del.quantity cm³/ : 12.6...12.8
 100 s: (12.4...13.0)

Spread cm³ : 0.4
 100 s: (0.6)

2nd speed rpm : 600.0
 Rack travel in mm : 6.0...6.2
 Del.quantity cm³/ : 1.7...2.1
 100 s: (1.5...2.3)
 Spread cm³ : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION
 Control-lever position

Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 900
 Del.quantity : 126.5...128.5
 1000 : (124.5...130.5)
 Spread cm³ : 4.00
 1000 : (6.50)

RATED SPEED

1st version

Control Lever
position degrees: 37...45

Testing:

1st rack travel in: 12.10
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1195...1205
3rd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 6.00...6.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 9.30...9.50

Measurement

Speed 1/min : 500
1st pressure hPa : 175
Rack travel in m: 10.30...10.40
2nd pressure hPa : 280
Rack travel in m: 12.10...12.50
3rd pressure hPa : 900
Rack travel in m: 13.10...13.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 68.0...72.0
1000 s: (66.0...74.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 180.0...200.0
1000 s: (175.0...205.0)

LOW IDLE

Speed rpm : 600
Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 17.0...21.0
1000 s: (15.0...23.0)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE44661
Start-of-delivery mark at control-rod
travel 10.5 mm and 15° after start of
delivery.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 e 2
 Edition : 21.08.91
 Replaces : 17.9.90
 Test oil : ISO-4113

Combination no. : 0 400 876 373

Injection pump
 Pump designation : PES6A100D410RS2764-1
 EP type number : 0 410 806 007
 Governor
 Governor design. : RSV600...1100A2C2161
 -8L
 Governor no. : 0 420 232 541

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466AZ004

1st version kW : 150.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 190...200

Test nozzle holder assembly : 1 688 901 101

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
 : (2.40...2.60)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.40...12.50

Del.quantity cm³/ : 11.7...11.9
 100 s: (11.5...12.1)

Spread cm³ : 0.4
 100 s: (0.6)

2nd speed rpm : 600.0
 Rack travel in mm : 6.3...6.5
 Del.quantity cm³/ : 1.9...2.3
 100 s: (1.7...2.5)
 Spread cm³ : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 900
 Del.quantity : 117.5...119.5
 1000 : (115.5...121.5)
 Spread cm³ : 4.00
 1000 : (6.50)

RATED SPEED

1st version

Control lever
position degrees: 41...49

Testing:

1st rack travel in: 11.40
Speed rpm : 1155...1165
2nd rack travel in: 4.00
Speed rpm : 1220...1230
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 6.30...6.50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.40...12.50
2nd speed rpm : 750
Rack travel in m: 14.00...14.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 9.60...9.80

Measurement

Speed 1/min : 500

1st pressure hPa : 95
Rack travel in m: 10.60...10.70
2nd pressure hPa : 200
Rack travel in m: 12.60...13.00
3rd pressure hPa : 900
Rack travel in m: 14.00...14.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 750

Del.quantity cm³/ : 140.5...144.5
1000 s: (138.5...146.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 70.5...74.5
1000 s: (68.5...76.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 1155...1165

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 180.0...200.0
1000 s: (175.0...205.0)

LOW IDLE

Speed rpm : 600
Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 19.0...23.0
1000 s: (17.0...25.0)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE44662
Start-of-delivery mark = 15.5° after
start of delivery cyl. 1.

Starting/full-load transition speed
from holding magnet = 450 1/min.

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 q 5
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 375Y

Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300AOC2251
 R
 Governor no. : 0 420 233 272

Cust. part no. : 1207950/0

Customer-spec. information
 Customer : DAF

Engine : NT 116

1st version kW : 119.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 650

 Rack travel in mm : 10.50...10.80

 Del.quantity cm³/ : 6.1...6.2
 100 s: (5.9...6.4)

 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.2
 Del.quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 650
 Del.quantity : 61.5...62.5
 1000 : (59.5...64.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 95...103

Testing:

1st rack travel in: 9.00
Speed rpm : 1070...1080
2nd rack travel in: 4.00
Speed rpm : 1120...1150
3rd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1310
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 74...82
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 570...630

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1025
Rack travel in m: 10.00...10.10
2nd speed rpm : 500
Rack travel in m: 11.00...11.10
3rd speed rpm : 950
Rack travel in m: 10.20...10.40
4th speed rpm : 850
Rack travel in m: 10.70...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1025
Del.quantity cm³/ : 60.0...62.0
1000 s: (57.5...64.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1070...1080

LOW IDLE

Speed rpm : 300

J21

Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 q 6
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 375Z
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300AOC2251
 R
 Governor no. : 0 420 233 272

Cust. part no. : 1209590

Customer-spec. information
 Customer : DAF

Engine : NT 116

1st version kW : 119.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 7.5...7.6
 100 s: (7.3...7.8)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.2
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Del. quantity : 75.5...76.5
 1000 : (73.5...78.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control Lever
position degrees: 95...103

Testing:

1st rack travel in: 10.50
Speed rpm : 1185...1195
2nd rack travel in: 4.00
Speed rpm : 1250...1280
3rd rack travel in: 4.00
Speed rpm : 1280...1310
4th rack travel in: 1440
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 300
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 550...610

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1140
Rack travel in m: 11.40...11.50
2nd speed rpm : 500
Rack travel in m: 11.50...11.60

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.50
Speed rpm : 1185...1195

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 5
 Edition : 21.08.91
 Replaces : 7.1.91
 Test oil : ISO-4113
 Combination no. : 0 400 876 382
 Injection pump
 Pump designation : PES6A100D410RS2762-1
 EP type number : 0 410 806 008
 Governor
 Governor design. : RSV475...1100A2C2204
 -7L
 Governor no. : 0 420 232 550

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076ADW03

1st version kW : 146.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 190...200

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29
 Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 11.60...11.70
 Del.quantity cm³/ : 11.2...11.4
 100 s: (11.0...11.6)
 Spread cm³ : 0.4
 100 s: (0.6)

2nd speed rpm : 475.0
 Rack travel in mm : 5.0...5.2
 Del.quantity cm³/ : 1.8...2.2
 100 s: (1.6...2.5)
 Spread cm³ : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 112.0...114.0
 1000 : (110.0...116.0)
 Spread cm³ : 4.00
 1000 : (6.50)

RATED SPEED

1st version

Control lever
position degrees: 42...50

Testing:

1st rack travel in: 10.70
Speed rpm : 1150...1160
2nd rack travel in: 4.00
Speed rpm : 1220...1230
3rd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 475
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 475
Rack travel in mm : 5.00...5.20

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.60...11.70
2nd speed rpm : 700
Rack travel in m: 13.60...13.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 144.0...148.0
1000 s: (142.0...150.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1150...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 475

J25

Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 18.5...22.5
1000 s: (16.0...25.0)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE47357
Start-of-delivery mark = 13,5° after
start of delivery cyl. 1.

Starting/full-load transition speed
from holding magnet = 450 1/min.

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o11
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 876 390V

Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV250...750A7C2206-3R
 Governor no. : 0 420 233 283

Cust. part no. : 0763023/0

Customer-spec. information
 Customer : DAF

Engine : DNDT 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.70...13.80

Del. quantity cm³/ : 10.2...10.3

100 s: (10.0...10.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 102.5...103.5

1000 : (100.5...105.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 104...112

Testing:

1st rack travel in: 12.70
Speed rpm : 895...900
2nd rack travel in: 4.00
Speed rpm : 939...954
4th rack travel in: 1090
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 73...81
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 310...370

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.70
Speed rpm : 895...900

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 012
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 390W
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV250...750A7C2206-
 3R
 Governor no. : 0 420 233 283
 Cust. part no. : 0763022/0
 Customer-spec. information
 Customer : DAF
 Engine : DNDT 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4
 Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 13.70...13.80
 Del. quantity cm³/ : 10.2...10.3
 100 s: (10.0...10.5)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 102.5...103.5
 1000 : (100.5...105.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 91...99

Testing:

1st rack travel in: 12.70
Speed rpm : 745...750
2nd rack travel in: 4.00
Speed rpm : 779...794
4th rack travel in: 935
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 69...77
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 300...360

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.70
Speed rpm : 745...750

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

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APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o13
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 390X
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV250...750A7C2206-3R
 Governor no. : 0 420 233 283
 Cust. part no. : 0763008/0
 Customer-spec. information
 Customer : DAF
 Engine : DNDT 620

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter x Wall thickness x Length mm : 6.00X1.50X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

K02

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 13.20...13.30
 Del. quantity cm³/ : 9.5...9.6
 100 s: (9.3...9.8)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 95.5...96.5
 1000 : (93.5...98.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 104...112

Testing:

1st rack travel in: 12.20
Speed rpm : 859....900
2nd rack travel in: 4.00
Speed rpm : 936...951
4th rack travel in: 1090
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 73...81
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 310...370

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.20
Speed rpm : 895...900

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

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APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o14
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 390Y
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV250...750A7C2206-
 3R
 Governor no. : 0 420 233 283
 Cust. part no. : 0763007/0
 Customer spec. information
 Customer : DAF
 Engine : DNDT 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

K04

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 13.20...13.30
 Del. quantity cm³/ : 9.5...9.6
 100 s: (9.3...9.8)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 95.5...96.5
 1000 : (93.5...98.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 91...99

Testing:

1st rack travel in: 12.20
Speed rpm : 745...750
2nd rack travel in: 4.00
Speed rpm : 777...792
4th rack travel in: 935
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 69...77
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 300...360

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.20
Speed rpm : 745...750

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

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APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o15
 Edition : 30.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 390Z
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV250...750A7C2206-
 3R
 Governor no. : 0 420 233 283
 Cust. part no. : 0763006/1
 Customer-spec. information
 Customer : DAF
 Engine : DNDT 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

K06

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 12.70...12.80
 Del. quantity cm³/ : 8.7...8.8
 100 s: (8.5...9.0)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 87.5...88.5
 1000 : (85.5...90.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 104...112

Testing:

1st rack travel in: 11.70
Speed rpm : 895...900
2nd rack travel in: 4.00
Speed rpm : 933...948
4th rack travel in: 1090
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 73...81
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 310...370

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 895...900

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

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APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 7
 Edition : 21.08.91
 Replaces : 18.6.91
 Test oil : ISO-4113

Combination no. : 0 400 876 391

Injection pump
 Pump designation : PES6A100D410RS2762-1
 EP type number : 0 410 806 008
 Governor
 Governor design. : RSV425...110DA2C2225
 -5L
 Governor no. : 0 420 232 566

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076ARW-09

1st version kW : 145.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 101

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

K08

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 11.4...11.6

100 s: (11.2...11.8)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.7...5.9

Del.quantity cm³/ : 2.6...3.0

100 s: (2.4...3.2)

Spread cm³ : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 114.0...116.0

1000 : (112.0...118.0)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 37...45

Testing:

1st rack travel in: 10.80
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.80...11.90
2nd speed rpm : 650
Rack travel in m: 13.70...13.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.70...13.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.70...11.90
2nd pressure hPa : 535
Rack travel in m: 12.30...12.40
3rd pressure hPa : 720
Rack travel in m: 13.30...13.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 650
Del.quantity cm3/ : 147.5...150.5
1000 s: (145.0...153.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 129.0...133.0
1000 s: (126.0...136.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 26.0...30.0
1000 s: (24.0...32.0)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE47502

Start-of-delivery mark = 13,5° after
start of delivery cyl. 1.

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Starting/full-load transition speed
from holding magnet = 450 1/min.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SAC 21,0 a
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 830 716
 Injection pump
 Pump designation : PE12P100A520/6RS3287
 EP type number : 0 411 800 704
 Governor
 Governor design. : RQV375...1000PA639-2
 Governor no. : 0 421 813 514

Customer-spec. information
 Customer : SACM

Engine : UD 18-V 12 R 1

1st version kW : 220.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 15.00...18.00

K10

Firing order : 1- 8- 5- 10- 3- 7-
 6- 11- 2- 9- 4- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.20...10.30

Del.quantity cm3/ : 9.4...9.6

100 s: (9.2...9.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 375.0

Rack travel in mm : 5.7...6.1

Del.quantity cm3/ : 1.2...1.6

100 s: (0.9...1.8)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1045
 travel mm : 8.30...8.50

2nd speed rpm : 250
 travel mm : 0.70...1.30

3rd speed rpm : 375
 travel mm : 3.00...3.40

4th speed rpm : 650
 travel mm : 5.00...5.40

5th speed rpm : 1350
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1160

Rack travel in mm : 8.90...11.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 94.0...96.0

1000 : (92.0...98.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 9.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1105...1135
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 79...87

Testing:
Speed rpm : 100
Minimum rack travel: 7.40
Speed rpm : 375
Rack travel in mm : 5.80...6.00

CONSTANT REGULATION
Speed rpm : 300...420

START CUT-OUT

Speed 1/min : 320 (340)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 220.0...240.0
1000 s: (216.0...244.0)

LOW IDLE

Speed rpm : 375
Rack travel in mm : 5.70...6.10
Del.quantity cm³/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

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APPLICATION

Rail tractor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 a 1
 Edition : 21.08.91
 Replaces : 7.4.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 261
 Injection pump
 Pump designation : PE6P100A320LS805
 EP type number : 0 411 806 148
 Governor
 Governor design. : RQ300/1250PA187R
 Governor no. : 0 421 801 034

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM401

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow quantity min. 1/h: 100...120
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50
 : (3.35...3.55)
 Rack travel in mm : 9.00...12.00

K12

Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 11.10...11.20
 Del.quantity cm³/ : 10.7...10.9
 100 s: (10.5...11.1)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.9...8.1
 Del.quantity cm³/ : 1.8...2.4
 100 s: (1.5...2.6)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 650
 Rack travel in mm : 13.80...14.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 107.0...109.0
 1000 : (105.0...111.0)
 Spread cm³ : 3.00
 1000 : (6.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 650
 Rack travel in mm : 14.2
 Testing:
 1st rack travel in: 10.10
 Speed rpm : 1290...1300
 2nd rack travel in: 4.00
 Speed rpm : 1345...1375
 4th rack travel in: 1450

Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 8.0

Testing:

Speed rpm : 100

Minimum rack trave: 9.50

Speed rpm : 300

Rack travel in mm : 7.90...8.10

Rack travel in mm : 2.00

Speed rpm : 420...450

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 11.10...11.20

2nd speed rpm : 600

Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del.quantity cm³/ : 85.0...90.0

1000 s: (83.0...92.0)

Spread cm³ : 4.00

1000 s: (7.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 110.0...130.0

1000 s: (106.0...134.0)

HIGH IDLE

1st version

Rack travel in mm : 3.90...4.10

Spread cm³ : 4.00

1000 s: (6.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 h
 Edition : 21.08.91
 Replaces : 18.2.91
 Test oil : ISO-4113
 Combination no. : 0 401 846 916
 Injection pump
 Pump designation : PE6P120A32ORS3248
 EP type number : 0 411 826 792
 Governor
 Governor design. : RQ250/1000PA832-3
 Governor no. : 0 421 801 506

Customer-spec. information
 Customer : DAF

Engine : WS 242

1st version kW : 242.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
 : (4.15...4.35)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850
 Rack travel in mm : 12.50...12.60
 Del.quantity cm³/ : 20.9...21.1
 100 s : (20.6...21.4)
 Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.5...6.7
 Del.quantity cm³/ : 1.4...2.0
 100 s : (1.1...2.3)
 Spread cm³ : 0.8
 100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 550
 Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h: 1000
 Del.quantity : 209.0...211.0
 1000 : (206.0...214.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 550
 Rack travel in mm : 15.8

Testing:
 1st rack travel in: 11.50
 Speed rpm : 1035...1050
 2nd rack travel in: 4.00

Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 335...375

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.50...13.60
2nd speed rpm : 1000
Rack travel in m: 13.40...13.60

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.00...11.20
2nd pressure hPa : 340
Rack travel in m: 12.10...12.20
3rd pressure hPa : 250
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 164.0...166.0
1000 s: (161.0...169.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1035...1050

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 5,9 b
 Edition : 23.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 937
 Injection pump
 Pump designation : PE6P110A320RS3266
 EP type number : 0 411 816 777
 Governor
 Governor design. : RQV300...1300PA996K
 Governor no. : 0 421 815 277

Customer-spec. information
 Customer : VOLVO-TRUCK

Engine : TD63ES

1st version kW : 155.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 101

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.40...2.50
 : (2.30...2.50)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.30 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 780
 Rack travel in mm : 11.50...11.60
 Del. quantity cm³/ : 13.1...13.3
 100 s: (12.9...13.5)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 330.0
 Rack travel in mm : 5.4...5.6
 Del. quantity cm³/ : 1.7...2.1
 100 s: (1.4...2.4)
 Spread cm³ : 0.7
 100 s: (1.1)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 330
 travel mm : 1.20...1.60
 2nd speed rpm : 500
 travel mm : 2.90...3.50
 3rd speed rpm : 900
 travel mm : 4.70...5.30
 4th speed rpm : 1370
 travel mm : 9.80...10.00
 5th speed rpm : 1450
 travel mm : 11.00...11.40

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1470
 Rack travel in mm : 6.00...12.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 780
 Aneroid pressure h: 1000

Del.quantity : 131.0...133.0
1000 : (129.0...135.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 123...131

Testing:

1st rack travel in: 11.10
Speed rpm : 1360...1370
2nd rack travel in: 4.00
Speed rpm : 1430...1460
4th rack travel in: 1520
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 78...86

Testing:

Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 330
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION

Speed rpm : 330...600

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 12.10...12.20
2nd speed rpm : 780
Rack travel in m: 11.50...11.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1300
Pressure hPa : 1000
Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 1300

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 110
Rack travel in m: 8.70...8.80
3rd pressure hPa : 650
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1300
Del.quantity cm³/ : 129.0...133.0
1000 s: (126.0...136.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 780
Del.quantity cm³/ : 73.0...75.0
1000 s: (70.0...78.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.10
Speed rpm : 1360...1370

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...130.0
1000 s: (96.0...134.0)
Rack travel in mm : 10.40...10.90

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

Start-of-delivery setting with ROBO
diaphragm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 5,9 b 1
 Edition : 23.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 938
 Injection pump
 Pump designation : PE6P110A32ORS3266
 EP type number : 0 412 816 777
 Governor
 Governor design. : RQV300...1300PA996-1
 K
 Governor no. : 0 421 815 278

Customer-spec. information
 Customer : VOLVO-TRUCK

Engine : TD63E

1st version kW : 133.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.40...2.50
 : (2.30...2.50)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.30 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 780

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 9.7...9.9

100 s: (9.5...10.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 330.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 1.7...2.1

100 s: (1.4...2.4)

Spread cm³ : 0.7

100 s: (1.1)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 330

travel mm : 1.20...1.60

2nd speed rpm : 500

travel mm : 2.90...3.50

3rd speed rpm : 900

travel mm : 4.70...5.30

4th speed rpm : 1370

travel mm : 9.80...10.00

5th speed rpm : 1450

travel mm : 11.00...11.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1470

Rack travel in mm : 6.00...12.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 780

Aneroid pressure h: 1000
Del.quantity : 97.0...99.0
1000 : (95.0...101.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 123...131

Testing:
1st rack travel in: 10.30
Speed rpm : 1360...1370
2nd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1520
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 330
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION

Speed rpm : 330...600

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 780
Rack travel in m: 10.20...10.30
2nd speed rpm : 1050
Rack travel in m: 10.80...10.90
3rd speed rpm : 1300
Rack travel in m: 11.30...11.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1300
Pressure hPa : 1000
Rack travel mm : 11.30...11.50

Measurement

Speed 1/min : 1300

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 110
Rack travel in m: 8.70...8.80

3rd pressure hPa : 540
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050
Del.quantity cm³/ : 110.0...114.0
1000 s: (107.0...117.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: 1000
Speed rpm : 1300
Del.quantity cm³/ : 118.0...124.0
1000 s: (115.0...127.0)

Aneroid pressure h: -
Speed rpm : 780
Del.quantity cm³/ : 73.0...75.0
1000 s: (70.0...78.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1360...1370

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...130.0
1000 s: (96.0...134.0)
Rack travel in mm : 10.40...10.90

LOW IDLE

Speed rpm : 330
Rack travel in mm : 5.40...5.60
Del.quantity cm³/ : 17.0...21.0
1000 s: (14.0...24.0)
Spread cm³ : 7.00
1000 s: (11.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

Start-of-delivery setting with ROBO
diaphragm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 12,2 a3
Edition : 23.08.91
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 948

Injection pump
Pump designation : PE6P120A32ORS3206-1
EP type number : 0 411 826 775
Governor
Governor design. : RQ750PA783-2
Governor no. : 0 421 801 600

Customer spec. information
Customer : PENTA

Engine : TWD 121 OG

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Rack travel in mm : 9.00...12.00

K20

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 26.6...26.8

100 s: (26.3...27.1)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.8...5.2

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 266.0...268.0

1000 : (263.0...271.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 84...92

Testing:

1st rack travel in: 10.60

Speed rpm : 748...753

2nd rack travel in: 4.00

Speed rpm : 773...786

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 748...753

Remarks:

:

APPLICATION

Generator set



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 11,0 y5
 Edition : 23.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 957
 Injection pump
 Pump designation : PE6P110A72ORS3115
 EP type number : 0 411 816 735
 Governor
 Governor design. : RQV250...1100PA468-1
 Governor no. : 0 421 813 956

Customer spec. information
 Customer : SCANIA

Engine : DN11 08

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 3.30...3.40
 : (3.25...3.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 11.70...11.80
 Del. quantity cm³/ : 11.2...11.4
 100 s: (11.0...11.6)
 Spread cm³ : 0.5
 100 s: (0.7)
 2nd speed rpm : 250.0
 Rack travel in mm : 4.5...4.8
 Del. quantity cm³/ : 1.2...1.6
 100 s: (-)
 Spread cm³ : 0.2
 100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.20...1.60
 2nd speed rpm : 350
 travel mm : 2.40...3.00
 3rd speed rpm : 650
 travel mm : 4.60...5.20
 4th speed rpm : 1145
 travel mm : 8.60...8.80
 5th speed rpm : 1255
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1125
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 112.0...114.0
 1000 : (110.0...116.0)
 Spread cm³ : 5.00
 1000 : (7.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 10.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 100
Minimum rack travel: 6.10
Speed rpm : 250
Rack travel in mm : 4.50...4.70
Rack travel in mm : 2.00
Speed rpm : 360...420

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1000
Del.quantity cm³/ : 113.5...118.5
1000 s: (111.0...121.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...290.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.50...4.70

Remarks:

:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Start-of-delivery setting with ROBO
diaphragm.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 12,0 a
 Edition : 21.08.91
 Replaces : 16.2.90
 Test oil : ISO-4113

Combination no. : 0 401 876 770

Injection pump
 Pump designation : PE6P110A320LS3852
 EP type number : 0 411 816 768
 Governor
 Governor design. : RSV400...900P1A544
 Governor no. : 0 421 833 326

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9306 T

1st version kW : 172.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 3- 5- 2- 4

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 890

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 13.8...14.1

100 s: (13.5...14.3)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 890

Del.quantity : 138.0...141.0

1000 : (135.5...143.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 88...96

Testing:

1st rack travel in: 10.70

Speed rpm : 930...940

2nd rack travel in: 4.00

Speed rpm : 945...975

3rd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1120
Speed rpm : 0.30...1.40

Remarks: :

LOW IDLE 1
Control Lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 890
Rack travel in m: 11.70...11.80
2nd speed rpm : 500
Rack travel in m: 11.70...11.90
3rd speed rpm : 420
Rack travel in m: 12.90...13.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm³/ : 140.0...144.0
1000 s: (137.0...147.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 930...940

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm³ : 4.50
1000 s: (7.50)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 12,0 a1
Edition : 21.08.91
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 876 770A
Injection pump
Pump designation : PE6P110A32QLS3852
EP type number : 0 411 816 768
Governor
Governor design. : RSV400...900P1A544
Governor no. : 0 421 833 326

Customer-spec. information
Customer : LIEBHERR

Engine : D 9306 TB

1st version kW : 132.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
: (3.75...3.95)

Rack travel in mm : 9.00...12.00

K26

Firing order : 1- 6- 3- 5- 2- 4

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 890

Rack travel in mm : 11.30...11.40

Del.quantity cm3/ : 13.3...13.5

100 s: (13.0...13.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 890

Del.quantity : 133.0...135.0

1000 : (130.5...137.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 96...104

Testing:

1st rack travel in: 10.30

Speed rpm : 930...940

2nd rack travel in: 6.40

Speed rpm : 955...985

4th rack travel in: 1120
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 890
Rack travel in m: 11.30...11.40
2nd speed rpm : 500
Rack travel in m: 11.30...11.50
3rd speed rpm : 420
Rack travel in m: 12.50...13.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm³/ : 132.0...136.0
1000 s: (129.0...139.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 930...940

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 12,0 a2
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 770C
 Injection pump
 Pump designation : PE6P110A320LS3852
 EP type number : 0 411 816 768
 Governor
 Governor design. : RSV400...900P1A5/44
 Governor no. : 0 421 833 326

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9306 TI

1st version kW : 220.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 3- 5- 2- 4

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 890

Rack travel in mm : 14.50...14.60

Del. quantity cm³/ : 19.5...19.7

100 s : (19.2...19.9)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del. quantity cm³/ : 1.3...1.8

100 s : (1.0...2.0)

Spread cm³ : 0.4

100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 890

Del. quantity : 195.0...197.0

1000 : (192.5...199.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 98...106

Testing:

1st rack travel in: 13.50

Speed rpm : 930...940

2nd rack travel in: 6.40

Speed rpm : 980...1010

4th rack travel in: 1120
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 890
Rack travel in m: 14.50...14.60
2nd speed rpm : 500
Rack travel in m: 14.50...14.70
3rd speed rpm : 420
Rack travel in m: 15.70...16.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm³/ : 200.0...204.0
1000 s: (197.0...207.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.50
Speed rpm : 930...940

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 s
 Edition : 27.05.91
 Replaces : 28.3.91
 Test oil : ISO-4113
 Combination no. : 0 401 876 783
 Injection pump
 Pump designation : PE6P110A720RS3225
 EP type number : 0 411 816 763
 Governor
 Governor design. : RSV250...750P7A507-2
 Governor no. : 0 421 833 353

Customer-spec. information
 Customer : DAF

Engine : Hs AG

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 12.90...13.00
 Del. quantity cm³/ : 12.4...12.6
 100 s : (12.2...12.8)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 325.0
 Rack travel in mm : 7.3...7.5
 Del. quantity cm³/ : 1.3...1.7
 100 s : (1.0...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 124.0...126.0
 1000 : (122.0...128.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 90...98

Testing:
 1st rack travel in: 11.90
 Speed rpm : 750...755
 2nd rack travel in: 4.00
 Speed rpm : 780...795
 4th rack travel in: 950
 Speed rpm : 0.30...1.40

LOW IDLE 1
 Control lever

position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.3
Speed rpm : 325
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 345...385

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.90
Speed rpm : 750...755

LOW IDLE

Speed rpm : 325
Rack travel in mm : 5.20...5.40

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 s 1
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 783
 Injection pump
 Pump designation : PE6P110A720RS3225
 EP type number : 0 411 816 763
 Governor
 Governor design. : RSV325...750P7A507-4
 Governor no. : 0 421 833 362

Customer-spec. information

Customer : DAF
 Engine : Hs AG

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 12.90...13.00
 Del.quantity cm3/ : 12.4...12.6
 100 s : (12.2...12.8)
 Spread cm3 : 0.4
 100 s : (0.7)

2nd speed rpm : 325.0
 Rack travel in mm : 7.3...7.5
 Del.quantity cm3/ : 1.3...1.7
 100 s : (1.0...1.9)
 Spread cm3 : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 124.0...126.0
 1000 : (122.0...128.0)
 Spread cm3 : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 90...98

Testing:
 1st rack travel in: 11.90
 Speed rpm : 750...755
 2nd rack travel in: 4.00
 Speed rpm : 780...795
 4th rack travel in: 950
 Speed rpm : 0.30...1.40

LOW IDLE 1
 Control lever

position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.3
Speed rpm : 325
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 345...385

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.90
Speed rpm : 750...755

LOW IDLE

Speed rpm : 325
Rack travel in mm : 5.20...5.40

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 z 1
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 788
 Injection pump
 Pump designation : PE6P110A320LS3835-3
 EP type number : 0 411 816 773
 Governor
 Governor design. : RSV350...1050POA531-
 3
 Governor no. : 0 421 833 363

Customer-spec. information
 Customer : MB-NFZ

Engine : OM 441
 1st version kW : 160.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

L06

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1050
 Rack travel in mm : 12.70...12.80
 Del.quantity cm³/ : 13.6...13.8
 100 s: (13.3...14.0)
 Spread cm³ : 0.4
 100 s: (0.8)

2nd speed rpm : 350.0
 Rack travel in mm : 8.3...8.9
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)
 Spread cm³ : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Del.quantity : 136.0...138.0
 1000 : (133.5...140.5)
 Spread cm³ : 4.00
 1000 : (8.00)

RATED SPEED

1st version
 Control lever
 position degrees: 88...96

Testing:
 1st rack travel in: 11.70

Speed rpm : 1070...1080
2nd rack travel in: 4.00
Speed rpm : 1115...1133
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 64...72
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 8.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 8.30...8.90
Rack travel in mm : 2.00
Speed rpm : 380...440

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 124.0...128.0
1000 s: (121.0...131.0)
Spread cm3 : 6.00
1000 s: (8.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1070...1080

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

Observe VDT-I-420/120

APPLICATION

Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a46
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 087
 Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1050PA813-21
 Governor no. : 0 421 801 605

Customer-spec. information
 Customer : MAN

Engine : D2866TUH/001

1st version kW : 222.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

L08

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 11.20...11.30
 Del.quantity cm3/ : 19.5...19.7
 100 s: (19.2...20.0)
 Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.2...5.4
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 750
 Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del.quantity : 195.0...197.0
 1000 : (192.0...200.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 750
 Rack travel in mm : 15.5

Testing:

1st rack travel in: 10.20
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 300
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 390...430

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.60...11.70
2nd speed rpm : 1050
Rack travel in m: 11.50...11.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.20...11.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 270
Rack travel in m: 9.10...9.20
3rd pressure hPa : 450
Rack travel in m: 10.10...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050
Del.quantity cm3/ : 204.0...208.0
1000 s: (201.0...211.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 3-7167

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 7,7 a
 Edition : 23.08.91
 Replaces : 26.7.91
 Test oil : ISO-4113

Combination no. : 0 402 046 815

Injection pump
 Pump designation : PES6P120A720RS3249
 EP type number : 0 412 026 737
 Governor
 Governor design. : RQV300...1100PA954K
 Governor no. : 0 421 815 243

Customer-spec. information
 Customer : IVECO-UNIC

Engine : 8360.46.417

1st version kW : 196.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.50...12.60

Del.quantity cm³/ : 21.1...21.3

100 s: (20.8...21.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.0...4.4

Del.quantity cm³/ : 2.0...2.6
 100 s: (1.7...2.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1160
 travel mm : 10.60...10.80

2nd speed rpm : 300
 travel mm : 1.00...1.40

3rd speed rpm : 850
 travel mm : 6.60...7.00

4th speed rpm : 1350
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 1500

Del.quantity : 211.0...213.0

1000 : (208.0...216.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.60
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 14.00
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 49...57

Testing:
Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 300
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 330...390

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.50...12.60
2nd speed rpm : 700
Rack travel in m: 11.40...11.70
3rd speed rpm : 300
Rack travel in m: 9.00...9.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1100
Pressure hPa : 1500
Rack travel mm : 12.60...14.00

Measurement

Speed 1/min : 1100

1st pressure hPa : -
Rack travel in m: 8.10...8.30
2nd pressure hPa : 810
Rack travel in m: 11.40...11.50
3rd pressure hPa : 430
Rack travel in m: 9.00...9.30

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 700
Del.quantity cm³/ : 182.0...188.0
1000 s: (179.0...191.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 96.0...98.0
1000 s: (93.0...101.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.00...4.40
Del.quantity cm³/ : 20.0...26.0
1000 s: (17.0...29.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 12,0 j
 Edition : 23.08.91
 Replaces : 14.12.90
 Test oil : ISO-4113
 Combination no. : 0 402 046 819
 Injection pump
 Pump designation : PES6P120A32ORS3269
 EP type number : 0 412 026 743
 Governor
 Governor design. : RQV275...1000PA983
 Governor no. : 0 421 813 903

Customer-spec. information
 Customer : RVI

Engine : MIDR 06 35 40 L

1st version kW : 283.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 13.00...13.10
 Del.quantity cm³/ : 25.4...25.6
 100 s: (25.1...25.9)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 5.5...5.9
 Del.quantity cm³/ : 2.3...2.9
 100 s: (2.0...3.2)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1070
 travel mm : 7.70...7.90
 2nd speed rpm : 275
 travel mm : 0.70...1.10
 3rd speed rpm : 500
 travel mm : 3.50...4.10
 4th speed rpm : 750
 travel mm : 5.30...5.70
 5th speed rpm : 1450
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1125
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1000
 Del.quantity : 254.0...256.0
 1000 : (251.0...259.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 296...304

Testing:

1st rack travel in: 12.00
Speed rpm : 1065...1075
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 247...255

Testing:

Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 275
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION

Speed rpm : 310...420

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.80
2nd pressure hPa : 440
Rack travel in m: 12.40...12.60
3rd pressure hPa : 200
Rack travel in m: 10.30...10.70

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1000

Del.quantity cm³/ : 242.0...248.0
1000 s: (239.0...251.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 129.0...131.0
1000 s: (126.0...134.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1065...1075

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.50...5.90
Del.quantity cm³/ : 23.0...29.0
1000 s: (20.0...32.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 9,5 h
 Edition : 21.08.91
 Replaces : 26.7.91
 Test oil : ISO-4113

Combination no. : 0 402 046 821

Injection pump
 Pump designation : PES6P120A720RS3273
 EP type number : 0 412 026 746
 Governor
 Governor design. : RQV450...1100PA989
 Governor no. : 0 421 813 918

Customer-spec. information
 Customer : IVECO-UNIC

Engine : 8465.21.004

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.90...10.00

Del.quantity cm³/ : 15.5...15.7
 100 s : (15.2...16.0)

Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 400.0
 Rack travel in mm : 4.8...5.2
 Del.quantity cm³/ : 2.0...2.6
 100 s : (1.7...2.9)

Spread cm³ : 0.8
 100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1145
 travel mm : 7.90...8.10

2nd speed rpm : 450
 travel mm : 0.70...1.10

3rd speed rpm : 650
 travel mm : 3.90...4.50

4th speed rpm : 950
 travel mm : 6.60...7.00

5th speed rpm : 1500
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1180
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 155.0...157.0
 1000 : (152.0...160.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 8.90
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 64...72

Testing:
Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 400
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 450...580

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.90
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 125.0...145.0
1000 s: (121.0...149.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 4.80...5.20
Del. quantity cm³/ : 20.0...26.0
1000 s: (17.0...29.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 j 2
 Edition : 21.08.91
 Replaces : 21.6.91
 Test oil : ISO-4113
 Combination no. : 0 402 046 825
 Injection pump
 Pump designation : PES6P110A720LS3282
 EP type number : 0 412 016 736
 Governor
 Governor design. : RQ300/1100PA800-2
 Governor no. : 0 421 801 593

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 h

1st version kW : 157.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.10...13.20

Del.quantity cm³/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 9.0...9.3

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.4

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.50...14.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 136.0...138.0

1000 : (133.5...140.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 14.0

Testing:

1st rack travel in: 12.10

Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1250
Speed rpm : 0.00...2.40

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 200
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 370...410

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 113.0...116.0
1000 s: (110.0...119.0)
Spread cm3 : 5.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 j 3
 Edition : 21.08.91
 Replaces : 5.7.91
 Test oil : ISO-4113
 Combination no. : 0 402 046 826
 Injection pump
 Pump designation : PES6P110A720LS3282
 EP type number : 0 412 016 736
 Governor
 Governor design. : RQ300/1100PA786-2
 Governor no. : 0 421 801 576

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM447 h

1st version kW : 157.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 19.00...21.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.00...13.10

Del.quantity cm³/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0
 Rack travel in mm : 9.0...9.3
 Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.4

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.50...14.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 136.0...138.0

1000 : (133.5...140.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 14.0

Testing:

1st rack travel in: 12.00

Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1250
Speed rpm : 0.00...2.40

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:
Speed rpm : 200
Minimum rack trave: 8.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 370...410

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 113.0...116.0
1000 s: (110.0...119.0)
Spread cm3 : 5.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 t 2
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 889
 Injection pump
 Pump designation : PE8P120A320LS7816
 EP type number : 0 412 628 829
 Governor
 Governor design. : RQ300/950PA932-2
 Governor no. : 0 421 801 526

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 362.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)

Rack travel in mm : 20.00...21.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.60...14.80

Del.quantity cm³/ : 25.4...25.6

100 s: (25.1...25.9)

Spread cm³ : 0.6

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.5

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.2)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1000

Del.quantity : 254.0...256.0

1000 : (251.0...259.0)

Spread cm³ : 6.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 14.20
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1070...1100
4th rack travel in: 1150
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 200
Minimum rack trave: 7.80
Speed rpm : 300
Rack travel in mm : 5.90...6.50
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.90
2nd speed rpm : 950
Rack travel in m: 15.20...15.40
3rd speed rpm : 800
Rack travel in m: 15.50...15.70

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 14.60...14.80

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 11.60...11.80
2nd pressure hPa : 700
Rack travel in m: 13.80...14.00
3rd pressure hPa : 1200
Rack travel in m: 14.80...15.00
4th pressure hPa : 1300
Rack travel in m: 15.20...15.40
5th pressure hPa : -
Rack travel in m: 10.20...10.50

FUEL DELIVERY CHARACTERISTICS

L21

1st version

Aneroid pressure h: 1600
Speed rpm : 950
Del.quantity cm3/ : 270.0...273.0
1000 s: (267.0...276.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1600
Speed rpm : 800
Del.quantity cm3/ : 270.0...274.0
1000 s: (267.0...277.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 14.20
Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a22
 Edition : 21.06.91
 Replaces : 24.4.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 890
 Injection pump
 Pump designation : PE8P120A320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQ300/950PA932-4
 Governor no. : 0 421 801 533

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kw : 269.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 500
 Rack travel in mm : 14.00...14.20
 Del. quantity cm³/ : 20.3...20.5
 100 s : (20.0...20.8)
 Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.4
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.5)
 Spread cm³ : 0.6
 100 s : (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 500
 Aneroid pressure h: 800
 Del. quantity : 203.0...205.0
 1000 : (200.0...208.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.90
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 200
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.00...6.40
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.75
2nd speed rpm : 950
Rack travel in m: 12.90...13.10
3rd speed rpm : 800
Rack travel in m: 14.20...14.40

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600
1st pressure hPa : 350
Rack travel in m: 11.80...12.00
2nd pressure hPa : 500
Rack travel in m: 13.30...13.60
3rd pressure hPa : 950
Rack travel in m: 14.10...14.20 *
4th pressure hPa : -
Rack travel in m: 10.60...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1150
Speed rpm : 950
Del.quantity cm³/ : 189.0...192.0
1000 s: (186.0...195.0)

Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1150
Speed rpm : 750
Del.quantity cm³/ : 211.0...214.0
1000 s: (208.0...217.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 990...1000

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a32
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 648 890

Injection pump
 Pump designation : PE8P120A320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQ300/950PA932-4
 Governor no. : 0 421 801 533

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kW : 269.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 500

Rack travel in mm : 14.00...14.20

Del. quantity cm³/ : 20.1...20.3

100 s: (19.8...20.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.4
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 500
 Aneroid pressure h: 800
 Del. quantity : 201.0...203.0
 1000 : (198.0...206.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.90
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1200
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 200
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.00...6.40
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.75
2nd speed rpm : 950
Rack travel in m: 12.90...13.10
3rd speed rpm : 800
Rack travel in m: 14.20...14.40

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 800
Rack travel mm : 14.00...14.20

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 11.80...12.00
2nd pressure hPa : 500
Rack travel in m: 13.30...13.60
3rd pressure hPa : 950
Rack travel in m: 14.10...14.20 *
4th pressure hPa : -
Rack travel in m: 10.60...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1150
Speed rpm : 950
Del.quantity cm3/ : 190.0...193.0
1000 s: (187.0...196.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1150
Speed rpm : 750
Del.quantity cm3/ : 216.0...219.0
1000 s: (213.0...222.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 138.0...140.0
1000 s: (135.0...143.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90
Speed rpm : 990...1000

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a33
 Edition : 28.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 892
 Injection pump
 Pump designation : PE8P120A320LS7801-1
 EP type number : 0 412 628 818
 Governor
 Governor design. : RQV350...950PA866-11
 Governor no. : 0 421 813 946

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A
 1st version kW : 266.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 : 4- 1
 Phasing : 0-45-90-135-180-225-
 : 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 14.00...14.20
 Del.quantity cm³/ : 20.0...20.2
 100 s: (19.7...20.5)
 Spread cm³ : 0.5
 100 s: (0.9)
 2nd speed rpm : 350.0
 Rack travel in mm : 5.5...6.1
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.30...1.80
 2nd speed rpm : 424
 travel mm : 2.30...2.80
 3rd speed rpm : 700
 travel mm : 4.10...4.60
 4th speed rpm : 1008
 travel mm : 7.90...8.40
 5th speed rpm : 1220
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1025
 Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h : 650
Del. quantity : 200.0...202.0
1000 : (197.0...205.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 12.20
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1075...1105
4th rack travel in: 1150
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 66...74

Testing:
Speed rpm : 100
Minimum rack travel: 7.40
Speed rpm : 350
Rack travel in mm : 5.50...6.10

CONSTANT REGULATION

Speed rpm : 350...550

TORQUE CONTROL

2nd speed rpm : 950
Rack travel in m: 13.20...13.40
3rd speed rpm : 900
Rack travel in m: 13.50...13.60
4th speed rpm : 800
Rack travel in m: 14.30...14.50

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 650
Rack travel mm : 14.00...14.20

Measurement
Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 12.30...12.50
2nd pressure hPa : 375

L27

Rack travel in m: 13.40...13.60
3rd pressure hPa : 900
Rack travel in m: 14.10...14.20 *
4th pressure hPa : -
Rack travel in m: 11.50...11.80

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1100
Speed rpm : 950
Del. quantity cm³/ : 190.0...193.0
1000 s: (187.0...196.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1100
Speed rpm : 750
Del. quantity cm³/ : 213.0...217.0
1000 s: (210.0...220.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1100
Speed rpm : 950
Del. quantity cm³/ : 163.0...165.0
1000 s: (160.0...168.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 147.0...149.0
1000 s: (144.0...152.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0. m

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 12,8 o
 Edition : 30.08.91
 Replaces : 26.4.91
 Test oil : ISO-4113

Combination no. : 0 402 648 893

Injection pump
 Pump designation : PE8P120A320LS7835
 EP type number : 0 412 628 847
 Governor
 Governor design. : RQ300/950PA971-2
 Governor no. : 0 421 801 548

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM402 A

1st version kW : 280.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.20...14.40

Del.quantity cm³/ : 22.5...22.7

100 s: (22.2...23.0)

Spread cm³ : 0.6

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.2...6.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1000

Del.quantity : 225.0...227.0

1000 : (222.0...230.0)

Spread cm³ : 6.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.00
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1070...1100
4th rack travel in: 1150
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 200
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.50
2nd speed rpm : 950
Rack travel in m: 14.00...14.20
3rd speed rpm : 800
Rack travel in m: 14.60...14.80

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 14.20...14.40

Measurement

Speed 1/min : 600

1st pressure hPa : 250
Rack travel in m: 9.30...9.50
2nd pressure hPa : 650
Rack travel in m: 13.00...13.20
3rd pressure hPa : 1200
Rack travel in m: 14.30...14.50 *
4th pressure hPa : -
Rack travel in m: 9.20...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 950
Del.quantity cm3/ : 216.0...219.0
1000 s: (213.0...222.0)

Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1500
Speed rpm : 800
Del.quantity cm3/ : 234.0...238.0
1000 s: (231.0...241.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.00
Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 34.0...40.0
1000 s: (30.0...44.0)
Rack travel in mm : 9.20...9.50

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 12,8 o 2
 Edition : 21.08.91
 Replaces : 26.4.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 895
 Injection pump
 Pump designation : PE8P120A320LS7835
 EP type number : 0 412 628 847
 Governor
 Governor design. : RQ300/1050PA972-1
 Governor no. : 0 421 801 545

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM402 A

1st version kW : 280.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60
 : (5.45...5.65)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.20...14.40

Del. quantity cm³/ : 22.5...22.7

100 s: (22.2...23.0)

Spread cm³ : 0.6

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.2...6.8

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1000

Del. quantity : 225.0...227.0

1000 : (222.0...230.0)

Spread cm³ : 6.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.80
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 200
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.50
2nd speed rpm : 950
Rack travel in m: 13.80...14.00
3rd speed rpm : 800
Rack travel in m: 14.50...14.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 14.20...14.40

Measurement

Speed 1/min : 600

1st pressure hPa : 250
Rack travel in m: 9.40...9.60
2nd pressure hPa : 650
Rack travel in m: 13.00...13.20
3rd pressure hPa : 1200
Rack travel in m: 14.30...14.40 *
4th pressure hPa : -
Rack travel in m: 9.10...9.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 1050
Del.quantity cm³/ : 214.0...217.0
1000 s: (211.0...220.0)

Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1500
Speed rpm : 800
Del.quantity cm³/ : 232.0...236.0
1000 s: (229.0...239.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 122.0...124.0
1000 s: (119.0...127.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.80
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 30.0...40.0
1000 s: (26.0...44.0)
Rack travel in mm : 9.10...9.40

Remarks:

:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 v 2
 Edition : 21.06.91
 Replaces : 27.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 899
 Injection pump
 Pump designation : PE8P120A320LS7839
 EP type number : 0 412 628 849
 Governor
 Governor design. : RQ300/950PA971-5
 Governor no. : 0 421 801 559

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kw : 370.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 15.00...15.10

Del.quantity cm3/ : 25.6...25.8

100 s: (25.3...26.1)

Spread cm3 : 0.6

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.0...6.6

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm3 : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1050

Del.quantity : 256.0...258.0

1000 : (253.0...261.0)

Spread cm3 : 6.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 15.30
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1075...1105
4th rack travel in: 1150
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.3

Testing:

Speed rpm : 200
Minimum rack travel: 7.60
Speed rpm : 300
Rack travel in mm : 6.00...6.60
Rack travel in mm : 2.00
Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 950
Rack travel in m: 16.30...16.50
3rd speed rpm : 800
Rack travel in m: 16.30...16.50

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1050
Rack travel mm : 15.10...15.30

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 10.20...10.40
2nd pressure hPa : 800
Rack travel in m: 13.90...14.10
3rd pressure hPa : 1300
Rack travel in m: 15.30...15.50
4th pressure hPa : 1600
Rack travel in m: 15.90...16.10
5th pressure hPa : -
Rack travel in m: 9.30...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1900
Speed rpm : 950

Del.quantity cm³/ : 279.0...282.0
1000 s: (276.0...285.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1900
Speed rpm : 800
Del.quantity cm³/ : 283.0...287.0
1000 s: (280.0...290.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 15.30
Speed rpm : 990...1005

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 u
 Edition : 26.07.91
 Replaces : 3.5.91
 Test oil : ISO-4113

Combination no. : 0 402 648 900

Injection pump
 Pump designation : PE8P120A320LS7840
 EP type number : 0 412 628 850
 Governor
 Governor design. : RQ300/1050PA972-4
 Governor no. : 0 421 801 560

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kW : 250.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.30...13.50

Del.quantity cm³/ : 20.6...20.8
 100 s: (20.3...21.1)

Spread cm³ : 0.6
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 6.0...6.6
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 900
 Del.quantity : 206.0...208.0
 1000 : (203.0...211.0)
 Spread cm³ : 6.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.90
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 200
Minimum rack travel: 7.90
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.60
2nd speed rpm : 1050
Rack travel in m: 12.90...13.10
3rd speed rpm : 800
Rack travel in m: 14.20...14.40

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 13.30...13.50

Measurement

Speed 1/min : 600
1st pressure hPa : 300
Rack travel in m: 11.10...11.30
2nd pressure hPa : 650
Rack travel in m: 12.60...12.80
3rd pressure hPa : 1050
Rack travel in m: 13.40...13.50 *
4th pressure hPa : 1250
Rack travel in m: 14.00...14.20
5th pressure hPa : -
Rack travel in m: 10.60...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 1050

M08

Del.quantity cm3/ : 194.0...197.0
1000 s: (191.0...200.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1500
Speed rpm : 800
Del.quantity cm3/ : 220.0...224.0
1000 s: (217.0...227.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 123.0...125.0
1000 s: (120.0...128.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.90
Speed rpm : 1090...1105

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 v
 Edition : 21.08.91
 Replaces : 27.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 902
 Injection pump
 Pump designation : PE8P120A320LS7839
 EP type number : 0 412 628 849
 Governor
 Governor design. : RQ300/1050PA972-5
 Governor no. : 0 421 801 564

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 370.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve ²
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 15.10...15.30

Del.quantity cm³/ : 25.6...25.8

100 s: (25.3...26.1)

Spread cm³ : 0.6

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.2...6.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1050

Del.quantity : 256.0...258.0

1000 : (253.0...261.0)

Spread cm³ : 6.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 15.20
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 200
Minimum rack trave: 7.80
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 1050
Rack travel in m: 16.20...16.40
3rd speed rpm : 800
Rack travel in m: 16.30...16.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1050
Rack travel mm : 14.60...14.80

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 9.70...9.90
2nd pressure hPa : 800
Rack travel in m: 13.40...13.60
3rd pressure hPa : 1300
Rack travel in m: 14.80...15.00
4th pressure hPa : 1600
Rack travel in m: 15.10...15.30
5th pressure hPa : -
Rack travel in m: 9.30...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1900
Speed rpm : 1050

Del.quantity cm3/ : 271.0...274.0
1000 s: (268.0...277.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1900
Speed rpm : 800
Del.quantity cm3/ : 276.0...280.0
1000 s: (273.0...283.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 15.20
Speed rpm : 1090...1105

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 a34
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 648 903

Injection pump
 Pump designation : PE8P120A320LS7801-1
 EP type number : 0 412 628 818
 Governor
 Governor design. : RQV350...1050PA866
 -12
 Governor no. : 0 421 813 947

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 500

 Rack travel in mm : 13.90...14.10

 Del.quantity cm³/ : 20.1...20.3
 100 s: (19.8...20.6)

 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 350.0
 Rack travel in mm : 5.0...5.5
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 350
 travel mm : 1.30...1.80
 2nd speed rpm : 570
 travel mm : 3.30...3.80
 3rd speed rpm : 900
 travel mm : 5.40...5.90
 4th speed rpm : 1107
 travel mm : 7.80...8.30
 5th speed rpm : 1204
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1130
 Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 500
Aneroid pressure h: 650
Del.quantity : 201.0...203.0
1000 : (198.0...206.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 11.50
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 65...73

Testing:

Speed rpm : 250
Minimum rack trave: 7.60
Speed rpm : 350
Rack travel in mm : 5.00...5.50

CONSTANT REGULATION

Speed rpm : 350...550

TORQUE CONTROL

Dimension a mm : 1.60
2nd speed rpm : 1050
Rack travel in m: 12.50...12.70
3rd speed rpm : 700
Rack travel in m: 14.10...14.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 650
Rack travel mm : 13.90...14.10

Measurement

Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 12.20...12.40
2nd pressure hPa : 375

M12

Rack travel in m: 13.30...13.50
3rd pressure hPa : 900
Rack travel in m: 14.00...14.10 *
4th pressure hPa : -
Rack travel in m: 10.90...11.20

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1100
Speed rpm : 1050
Del.quantity cm3/ : 180.0...183.0
1000 s: (177.0...186.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1100
Speed rpm : 700
Del.quantity cm3/ : 213.0...217.0
1000 s: (210.0...220.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 147.0...149.0
1000 s: (144.0...152.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 u 2
Edition : 30.08.91
Replaces : 3.5.91
Test oil : ISO-4113
Combination no. : 0 402 648 909
Injection pump
Pump designation : PE8P120A320LS7840
EP type number : 0 412 628 850
Governor
Governor design. : RQ300/950PA971-6
Governor no. : 0 421 801 575

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM442 A
1st version kW : 250.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 105

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
x Wall thickness
x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 5.20...5.30
: (5.15...5.35)
Rack travel in mm : 20.00...21.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1
Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600
Rack travel in mm : 13.50...13.70
Del.quantity cm3/ : 20.6...20.8
100 s: (20.3...21.1)
Spread cm3 : 0.6
100 s: (0.9)
2nd speed rpm : 300.0
Rack travel in mm : 7.0...7.4
Del.quantity cm3/ : 1.6...2.2
100 s: (1.3...2.5)
Spread cm3 : 0.6
100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -2
Speed rpm : 600
Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 900
Del.quantity : 206.0...208.0
1000 : (203.0...211.0)
Spread cm3 : 6.00
1000 : (9.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.30
Speed rpm : 990...1005
2nd rack travel in: 4.00
Speed rpm : 1070...1100
4th rack travel in: 1150
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 200
Minimum rack travel: 7.60
Speed rpm : 300
Rack travel in mm : 6.20...6.80
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 950
Rack travel in m: 13.30...13.50
3rd speed rpm : 800
Rack travel in m: 13.90...14.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 13.50...13.70

Measurement

Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 10.80...11.00
2nd pressure hPa : 650
Rack travel in m: 12.80...13.00
3rd pressure hPa : 1050
Rack travel in m: 13.60...13.80 *
4th pressure hPa : 1250
Rack travel in m: 13.90...14.10
5th pressure hPa : -
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 950

Del.quantity cm3/ : 204.0...207.0
1000 s: (201.0...210.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1500
Speed rpm : 800
Del.quantity cm3/ : 220.0...224.0
1000 s: (217.0...227.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 123.0...125.0
1000 s: (120.0...128.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 990...1005

Remarks:

* Increase in control-rod travel with
respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 v 3
 Edition : 05.07.91
 Replaces : 3.6.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 911
 Injection pump
 Pump designation : PE8P120A320LS7839
 EP type number : 0 412 628 849
 Governor
 Governor design. : RQV300...1050PA797
 -27
 Governor no. : 0 421 813 916

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 370.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Test nozzle holder
 assembly : 1 688 901 105
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 075
 Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 14.60...14.80
 Del.quantity cm³/ : 25.6...25.8
 100 s: (25.3...26.1)
 Spread cm³ : 0.6
 100 s: (0.9)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.2...5.8
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50
 2nd speed rpm : 558
 travel mm : 4.30...4.80
 3rd speed rpm : 820
 travel mm : 5.90...6.40
 4th speed rpm : 1108
 travel mm : 8.30...8.80
 5th speed rpm : 1183
 travel mm : 8.30...8.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1130
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600
Aneroid pressure h: 1050
Del.quantity : 256.0...258.0
1000 : (253.0...261.0)
Spread cm3 : 6.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 118...126

Testing:

1st rack travel in: 14.10
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 76...84

Testing:

Speed rpm : 200
Minimum rack trave: 6.80
Speed rpm : 300
Rack travel in mm : 5.20...5.80

CONSTANT REGULATION

Speed rpm : 300...450

TORQUE CONTROL

Dimension a mm : 0.80
2nd speed rpm : 1050
Rack travel in m: 15.10...15.30
3rd speed rpm : 800
Rack travel in m: 15.90...16.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1050
Rack travel mm : 14.60...14.80

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 9.70...9.90
2nd pressure hPa : 800

Rack travel in m: 13.40...13.60
3rd pressure hPa : 1300
Rack travel in m: 14.80...15.00
4th pressure hPa : 1600
Rack travel in m: 15.40...15.60
5th pressure hPa : -
Rack travel in m: 8.90...9.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1900
Speed rpm : 1050
Del.quantity cm3/ : 271.0...274.0
1000 s: (268.0...277.0)
Spread cm3 : 8.00
1000 s: (12.)
Aneroid pressure h: 1900
Speed rpm : 800
Del.quantity cm3/ : 276.0...280.0
1000 s: (273.0...283.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 14.10
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 275.0...295.0
1000 s: (271.0...299.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 f
Edition : 26.07.91
Replaces : 3.6.91
Test oil : ISO-4113
Combination no. : 0 402 648 912
Injection pump
Pump designation : PE8P130A920/5LS7841
EP type number : 0 412 638 803
Governor
Governor design. : RGV300...950PA994K
Governor no. : 0 421 815 275

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8280.42.050

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40...45

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 105

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant. per values

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10 : (4.95...5.15)

Rack travel in mm : 9.00...12.00

M17

Firing order : 1- 8- 4- 3- 6- 5- 7- 2

Phasing : 0-45-90-135-180-225-270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 550

Rack travel in mm : 13.10...13.20

Del.quantity cm3/ : 22.6...22.9

100 s: (22.2...23.2)

Spread cm3 : 0.6

100 s: (1.0)

2nd speed rpm : 300.0

Rack travel in mm : 5.8...6.2

Del.quantity cm3/ : 2.0...2.6

100 s: (1.6...3.0)

Spread cm3 : 1.0

100 s: (1.4)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 995

travel mm : 10.20...10.40

2nd speed rpm : 300

travel mm : 2.00...2.30

3rd speed rpm : 700

travel mm : 5.80...6.20

4th speed rpm : 1200

travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1000

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 550

Aneroid pressure h: 900

Del.quantity : 226.0...229.0

1000 : (222.5...232.5)

Spread cm3 : 6.00

1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:
1st rack travel in: 12.70
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1075...1105
3rd rack travel in: 4.00
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 61...69

Testing:
Speed rpm : 200
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 310...440

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 550
Rack travel in m: 13.10...13.20
2nd speed rpm : 800
Rack travel in m: 13.70...13.90
3rd speed rpm : 700
Rack travel in m: 13.40...13.60
4th speed rpm : 950
Rack travel in m: 13.70...13.90

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 950
Pressure hPa : 900
Rack travel mm : 13.70...13.80

Measurement
Speed 1/min : 950

1st pressure hPa : -
Rack travel in m: 10.40...10.60
2nd pressure hPa : 380
Rack travel in m: 12.90...13.00
3rd pressure hPa : 260
Rack travel in m: 11.10...11.50

M18

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del.quantity cm3/ : 221.0...228.0
1000 s: (217.5...231.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 144.0...147.0
1000 s: (140.5...150.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.70
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 165.0...195.0
1000 s: (161.0...199.0)
Rack travel in mm : 11.90...12.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.80...6.20
Del.quantity cm3/ : 20.0...26.0
1000 s: (16.0...30.0)
Spread cm3 : 10.00
1000 s: (14.00)

Remarks:

:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 f1
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 913
 Injection pump
 Pump designation : PE8P130A920/5LS7841
 EP type number : 0 412 638 803
 Governor
 Governor design. : RQV300...950PA994-1K
 Governor no. : 0 421 815 276

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8280.42.350 SPR

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 4- 3- 6- 5-
 7- 2

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 550

Rack travel in mm : 13.70...13.80

Del.quantity cm³/ : 24.5...24.8

100 s: (24.1...25.1)

Spread cm³ : 0.6

100 s: (1.0)

2nd speed rpm : 300.0

Rack travel in mm : 5.8...6.2

Del.quantity cm³/ : 3.0...3.6

100 s: (2.6...4.0)

Spread cm³ : 1.0

100 s: (1.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 995

travel mm : 10.20...10.40

2nd speed rpm : 300

travel mm : 2.00...2.30

3rd speed rpm : 700

travel mm : 5.80...6.20

4th speed rpm : 1200

travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1000

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 550

Aneroid pressure h: 900

Del.quantity : 245.0...248.0

1000 : (241.5...251.5)

Spread cm³ : 6.00

1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:
1st rack travel in: 13.70
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1075...1105
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 61...69

Testing:
Speed rpm : 200
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 310...440

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 550
Rack travel in m: 13.70...13.80
2nd speed rpm : 800
Rack travel in m: 14.60...14.80
3rd speed rpm : 650
Rack travel in m: 14.30...14.50
4th speed rpm : 950
Rack travel in m: 14.70...14.90

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 950
Pressure hPa : 900
Rack travel mm : 14.70...14.80

Measurement
Speed 1/min : 950

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 450
Rack travel in m: 13.60...13.70
3rd pressure hPa : 280
Rack travel in m: 11.40...11.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del.quantity cm3/ : 248.0...255.0
1000 s: (244.5...258.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 140.0...143.0
1000 s: (136.5...146.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.70
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 165.0...195.0
1000 s: (161.0...199.0)
Rack travel in mm : 11.90...12.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.80...6.20
Del.quantity cm3/ : 30.0...36.0
1000 s: (26.0...40.0)
Spread cm3 : 10.00
1000 s: (14.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 v 4
 Edition : 21.06.91
 Replaces : 3.6.91
 Test oil : ISO-4113
 Combination no. : 0 402 648 917
 Injection pump
 Pump designation : PE8P120A320LS7839
 EP type number : 0 412 628 849
 Governor
 Governor design. : RQ300/1050PA993-3
 Governor no. : 0 421 801 601

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 370.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 105

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1
 Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 14.30...14.50
 Del.quantity cm³/ : 25.6...25.8
 100 s: (25.3...26.1)
 Spread cm³ : 0.6
 100 s: (0.9)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.6...6.2
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1050
 Del.quantity : 256.0...258.0
 1000 : (253.0...261.0)
 Spread cm³ : 6.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 14.30
Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 200
Minimum rack travel: 7.20
Speed rpm : 300
Rack travel in mm : 5.60...6.20
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 1050
Rack travel in m: 15.30...15.50
3rd speed rpm : 800
Rack travel in m: 15.50...15.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1050
Rack travel mm : 14.30...14.50

Measurement

Speed 1/min : 600
1st pressure hPa : 350
Rack travel in m: 9.10...9.30
2nd pressure hPa : 800
Rack travel in m: 12.10...12.30
3rd pressure hPa : 1300
Rack travel in m: 14.50...14.70
4th pressure hPa : 1600
Rack travel in m: 15.10...15.30
5th pressure hPa : -
Rack travel in m: 8.50...8.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1900
Speed rpm : 1050
Del.quantity cm3/ : 271.0...274.0
1000 s: (268.0...277.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1900
Speed rpm : 800
Del.quantity cm3/ : 276.0...280.0
1000 s: (273.0...283.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 14.30
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 275.0...295.0
1000 s: (271.0...299.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 x
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 648 919

Injection pump
 Pump designation : PE8P120A320LS7843
 EP type number : 0 412 628 859
 Governor
 Governor design. : RQV350...1050PA842-8
 Governor no. : 0 421 813 952

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 320.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)

Rack travel in mm : 20.00...21.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.50...14.70

Del.quantity cm³/ : 22.9...23.1
 100 s: (22.6...23.4)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 350.0
 Rack travel in mm : 5.7...5.9
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)

Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 0.80...1.20

2nd speed rpm : 510
 travel mm : 3.60...4.10

3rd speed rpm : 1100
 travel mm : 7.80...8.40

4th speed rpm : 1270
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1125

Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600
Aneroid pressure h: 1000
Del. quantity : 229.0...231.0
1000 : (226.0...234.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:

1st rack travel in: 13.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 63...71

Testing:

Speed rpm : 100
Minimum rack travel: 7.40
Speed rpm : 350
Rack travel in mm : 5.50...6.10

CONSTANT REGULATION

Speed rpm : 350...550

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed rpm : 1050
Rack travel in m: 14.40...14.60
3rd speed rpm : 800
Rack travel in m: 14.80...15.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 14.50...14.70

Measurement

Speed 1/min : 600
1st pressure hPa : 400
Rack travel in m: 10.90...11.10
2nd pressure hPa : 550
Rack travel in m: 12.20...12.40
3rd pressure hPa : 1250
Rack travel in m: 14.60...14.80 *

4th pressure hPa : -
Rack travel in m: 9.20...9.50

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 1030
Del. quantity cm³/ : 229.0...232.0
1000 s: (226.0...235.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1500
Speed rpm : 900
Del. quantity cm³/ : 236.0...240.0
1000 s: (233.0...243.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 136.0...138.0
1000 s: (133.0...141.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 250.0...270.0
1000 s: (246.0...274.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 y
 Edition : 21.08.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 648 920
 Injection pump
 Pump designation : PE8P120A320LS7844
 EP type number : 0 412 628 860
 Governor
 Governor design. : RGV350...1050PA870
 -16
 Governor no. : 0 421 813 953

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442 LA

1st version kW : 370.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.80...4.90
 : (4.75...4.95)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.40...14.60

Del. quantity cm³/ : 25.2...25.4

100 s: (24.9...25.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.7...5.9

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 0.80...1.20

4th speed rpm : 1270
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1125

Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1000

Del.quantity : 252.0...254.0
1000 : (249.0...257.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 111...119

Testing:

1st rack travel in: 14.50
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 63...71

Testing:

Speed rpm : 100
Minimum rack travel: 7.40
Speed rpm : 350
Rack travel in mm : 5.50...6.10

CONSTANT REGULATION

Speed rpm : 350...550

TORQUE CONTROL

Dimension a mm : 0.70
2nd speed rpm : 1050
Rack travel in m: 15.50...15.70
3rd speed rpm : 800
Rack travel in m: 16.20...16.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 100
Rack travel mm : 14.40...14.60

Measurement

Speed 1/min : 600

1st pressure hPa : 290
Rack travel in m: 9.00...9.20
2nd pressure hPa : 780
Rack travel in m: 13.50...13.70
3rd pressure hPa : 1200
Rack travel in m: 14.50...14.70 *
4th pressure hPa : 1380
Rack travel in m: 15.40...15.60

5th pressure hPa : -
Rack travel in m: 8.90...10.20

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1800
Speed rpm : 1050
Del.quantity cm³/ : 274.0...277.0
1000 s: (271.0...280.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1800
Speed rpm : 800
Del.quantity cm³/ : 295.0...299.0
1000 s: (292.0...302.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 139.0...141.0
1000 s: (136.0...144.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 14.50
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 280.0...300.0
1000 s: (276.0...304.0)

Remarks:

* Increase in control-rod travel with
respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 L 4
 Edition : 26.07.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 649 800A
 Injection pump
 Pump designation : PE10P120A320LS7809
 EP type number : 0 412 629 800
 Governor
 Governor design. : RQ300/1050PA856
 Governor no. : 0 421 801 386

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM443 LA

1st version kW : 370.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 130...150

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 10- 9- 4- 1- 8- 7-
 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.90...14.10

Del. quantity cm³/ : 20.4...20.6

100 s: (20.1...20.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.6...6.8

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 700

Del. quantity : 204.0...206.0

1000 : (201.0...209.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 29.0

Testing:

1st rack travel in: 12.70
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.7

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 300
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : ?
2nd speed rpm : 1050
Rack travel in m: 13.70...13.90
3rd speed rpm : 800
Rack travel in m: 14.30...14.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 13.90...14.10

Measurement

Speed 1/min : 600
1st pressure hPa : 400
Rack travel in m: 12.30...12.50
2nd pressure hPa : 600
Rack travel in m: 12.80...13.00
3rd pressure hPa : 960
Rack travel in m: 14.20...14.30
4th pressure hPa : 1100
Rack travel in m: 14.80...15.00
5th pressure hPa : -
Rack travel in m: 11.20...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1300
Speed rpm : 1050
Del.quantity cm³/ : 206.0...209.0
1000 s: (203.0...212.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1300
Speed rpm : 800
Del.quantity cm³/ : 217.0...221.0
1000 s: (214.0...224.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 133.0...135.0
1000 s: (130.0...138.0)
Spread cm³ : 8.00
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.70
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 230.0...250.0
1000 s: (226.0...254.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 i 3
 Edition : 21.08.91
 Replaces : 24.4.91
 Test oil : ISO-4113
 Combination no. : 0 402 649 810
 Injection pump
 Pump designation : PE10P120A320LS7809
 EP type number : 0 412 629 800
 Governor
 Governor design. : RQV350...1050PA870-6
 Governor no. : 0 421 813 766

Customer-spec. information

Customer : MERCEDES-BENZ

Engine : OM443 LA

1st version kW : 401.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 130...150

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 216-261-288-333
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.30...14.50

Del.quantity cm³/ : 21.1...21.3

100 s: (20.8...21.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 6.2...6.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.6

100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.90...2.10

2nd speed rpm : 700
 travel mm : 4.10...4.50

3rd speed rpm : 1100
 travel mm : 7.60...8.00

4th speed rpm : 1200
 travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600
Aneroid pressure h: 750
Del. quantity : 211.0...213.0
1000 : (208.0...216.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 13.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 64...72

Testing:
Speed rpm : 200
Minimum rack travel: 8.60
Speed rpm : 350
Rack travel in mm : 6.20...6.80

CONSTANT REGULATION

Speed rpm : 300...400

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed rpm : 1050
Rack travel in m: 14.70...14.90
3rd speed rpm : 850
Rack travel in m: 15.10...15.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 14.30...14.50

Measurement

Speed 1/min : 600

1st pressure hPa : 400
Rack travel in m: 11.70...11.90
2nd pressure hPa : 550
Rack travel in m: 13.20...13.40
3rd pressure hPa : 960
Rack travel in m: 14.40...14.50 *

NO2

4th pressure hPa : 1100
Rack travel in m: 14.80...15.00
5th pressure hPa : -
Rack travel in m: 11.10...11.40

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1300
Speed rpm : 1050
Del. quantity cm³/ : 224.0...226.0
1000 s: (221.0...229.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: 1300
Speed rpm : 850
Del. quantity cm³/ : 232.0...236.0
1000 s: (229.0...239.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: 1300
Speed rpm : 1050
Del. quantity cm³/ : 168.0...170.0
1000 s: (165.0...173.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 132.0...136.0
1000 s: (129.0...139.0)
Spread cm³ : 8.00
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 240.0...260.0
1000 s: (236.0...264.0)

Remarks:

* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 18,2 h1
 Edition : 21.06.91
 Replaces : 27.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 649 813
 Injection pump
 Pump designation : PE10P120A520LS7825-1
 EP type number : 0 412 629 809
 Governor
 Governor design. : RQV250...1150PA902-3
 Governor no. : 0 421 813 761

Customer-spec. information
 Customer : MAN

Engine : D 2840 LXE

1st version kW : 603.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 10- 9- 4- 1- 8- 7-
 : 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 : 216-261-288-333
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 13.40...13.50
 Del.quantity cm³/ : 29.6...29.8
 100 s : (29.3...30.1)
 Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 500
 Rack travel in mm : 8.80...9.00
 Del.quantity cm³/ : 14.9...15.1
 100 s : (14.6...15.4)
 Spread cm³ : 0.8
 100 s : (1.2)
 3rd speed rpm : 250
 Rack travel in mm : 7.30...7.50
 Del.quantity cm³/ : 5.2...6.0 **
 100 s : (-)
 Spread cm³ : -
 100 s : (-)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 0.90...1.10
 2nd speed rpm : 450
 travel mm : 2.90...3.50
 3rd speed rpm : 750
 travel mm : 5.50...5.90
 4th speed rpm : 1150
 travel mm : 9.20...9.40
 5th speed rpm : 1400
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1225

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
Aneroid pressure h: 1300
Del.quantity : 296.0...298.0
1000 : (293.0...301.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 118...126

Testing:

1st rack travel in: 12.40
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1285...1315
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 76...84

Testing:

Speed rpm : 100
Minimum rack travel: 8.90
Speed rpm : 250
Rack travel in mm : 7.30...7.50
Rack travel in mm : 2.00
Speed rpm : 430...490

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1300
Rack travel mm : 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 100
Rack travel in m: 9.30...9.40
3rd pressure hPa : 470
Rack travel in m: 12.00...12.40

START CUT-OUT

N05

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 149.0...151.0
1000 s: (146.0...154.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0**
1000 s: (-)

Speed rpm : 100
Del.quantity cm³/ : 0 *
1000 s: (-)
Rack travel in mm : 17.5...21.0

HIGH IDLE

1st version

Speed rpm : 500
Rack travel in mm : < 7.00
Del.quantity cm³/ : 0 *
1000 s: (-)

2nd version

Speed rpm : 500
Rack travel in mm : < 7.50
Del.quantity cm³/ : < 50.0
1000 s: (-)

3rd version

Speed rpm : 500
Rack travel in mm : 8.10...8.30
Del.quantity cm³/ : 125.0...
1000 s: (-)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 7.30...7.50
Del.quantity cm³/ : 52.0...60.0 **
1000 s: (-)

Remarks:

: MAN-NR. 3-7151

* applies to cylinders 1, 2, 3, 7 and 9

** applies for cylinders 4, 5, 6, 8 and 10

APPLICATION

Ship



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 21,9 j 4
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 670 804
 Injection pump
 Pump designation : PE12P120A320LS7813-1
 EP type number : 0 412 620 811
 Governor
 Governor design. : RSV350...750PCA825-5
 Governor no. : 0 421 833 277

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 444 LA

1st version kW : 441.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 150...170

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 19.00...21.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 16.50...16.60

Del.quantity cm³/ : 28.0...28.2
 100 s: (27.7...28.5)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 350.0
 Rack travel in mm : 5.5...5.9
 Del.quantity cm³/ : 1.4...2.0
 100 s: (1.1...2.3)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 280.0...282.0
 1000 : (277.0...285.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 20...28

Testing:

1st rack travel in: 15.50
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 775...788
4th rack travel in: 900
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 9...17
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7
Speed rpm : 350
Rack travel in mm : 5.50...5.90

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 15.50
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...280.0
1000 s: (256.0...284.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 g12
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 678 808
 Injection pump
 Pump designation : PE8P120A320LS7801-2
 EP type number : 0 412 628 825
 Governor
 Governor design. : RSV350...1050POA535
 Governor no. : 0 421 833 281

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442LA

1st version kW : 320.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness : 6.00X1.50X1000
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (4.15...5.35)

Rack travel in mm : 9.00...12.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 14.50...14.60

Del.quantity cm³/ : 21.5...21.8

100 s: (21.2...22.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 1.5...2.1

100 s: (1.2...2.4)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 750

Del.quantity : 215.0...218.0

1000 : (212.0...221.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 86...94

Testing:

1st rack travel in: 14.00
Speed rpm : 1070...1080
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 360...420

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 15.00...15.20
2nd speed rpm : 850
Rack travel in m: 15.70...15.90
3rd speed rpm : 925
Rack travel in m: 15.40...15.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 750
Rack travel mm : 14.50...14.60

Measurement

Speed 1/min : 600

1st pressure hPa : 400
Rack travel in m: 12.20...12.40
2nd pressure hPa : 550

N10

Rack travel in m: 13.70...13.90
3rd pressure hPa : 950
Rack travel in m: 14.90...15.10
4th pressure hPa : 1050
Rack travel in m: 15.30...15.50
5th pressure hPa : -
Rack travel in m: 11.20...11.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1250
Speed rpm : 1030
Del.quantity cm³/ : 230.0...233.0
1000 s: (227.0...236.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1250
Speed rpm : 850
Del.quantity cm³/ : 242.0...246.0
1000 s: (239.0...249.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 147.0...149.0
1000 s: (144.0...152.0)
Spread cm³ : 8.00
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 14.00
Speed rpm : 1070...1080

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...260.0
1000 s: (236.0...264.0)
Observe VDT-I-420/120
emarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 g13
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 678 810
 Injection pump
 Pump designation : PE8P120A320LS7801-2
 EP type number : 0 412 628 825
 Governor
 Governor design. : RSV450...1050POA541
 Governor no. : 0 421 833 303

Cust. part no. : T3

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (4.15...5.35)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 18.1...18.3

100 s: (17.8...18.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 450.0

Rack travel in mm : 4.9...5.2

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Aneroid pressure h: 1100

Del.quantity : 181.0...183.0

1000 : (178.0...186.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 88...96

Testing:
1st rack travel in: 11.70
Speed rpm : 1060...1070
2nd rack travel in: 4.00
Speed rpm : 1110...1130
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 67...75
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.0

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 450
Rack travel in mm : 4.90...5.20
Rack travel in mm : 2.00
Speed rpm : 460...520

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 12.70...12.80
2nd speed rpm : 950
Rack travel in m: 13.10...13.30
3rd speed rpm : 800
Rack travel in m: 13.80...14.00
4th speed rpm : 700
Rack travel in m: 14.30...14.50

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.00...11.30

Measurement
Speed 1/min : 500

1st pressure hPa : 420

N12

Rack travel in m: 11.70...11.90
2nd pressure hPa : 600
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1100
Speed rpm : 700
Del. quantity cm3/ : 213.0...217.0
1000 s: (210.0...220.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 143.0...145.0
1000 s: (140.0...148.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1060...1070

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

APPLICATION

emarks:
Forage harvester :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 g14
 Edition : 21.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 678 812
 Injection pump
 Pump designation : PE8P120A320LS7801-2
 EP type number : 0 412 628 825
 Governor
 Governor design. : RSV350...1050POA535-
 2
 Governor no. : 0 421 833 318
 Cust. part no. : T3
 Customer-spec. information
 Customer : MERCEDES-BENZ
 Engine : OM442A
 1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.20...5.30
 : (4.15...5.35)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 Firing order : 4- 1
 Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1030
 Rack travel in mm : 12.80...12.90
 Del.quantity cm³/ : 18.1...18.3
 100 s: (17.8...18.6)
 Spread cm³ : 0.5
 100 s: (0.9)
 2nd speed rpm : 350.0
 Rack travel in mm : 5.4...6.0
 Del.quantity cm³/ : 1.5...2.1
 100 s: (1.2...2.4)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1030
 Aneroid pressure h: 1100
 Del.quantity : 181.0...183.0
 1000 : (178.0...186.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 86...94

Testing:
1st rack travel in: 11.80
Speed rpm : 1070...1080
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.40...6.00
Rack travel in mm : 2.00
Speed rpm : 410...480

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 12.80...12.90
2nd speed rpm : 950
Rack travel in m: 13.10...13.30
3rd speed rpm : 830
Rack travel in m: 13.80...14.00
4th speed rpm : 700
Rack travel in m: 14.40...14.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.20...11.50

Measurement
Speed 1/min : 500

1st pressure hPa : 420

Rack travel in m: 11.90...12.10
2nd pressure hPa : 600
Rack travel in m: 13.50...13.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1100
Speed rpm : 700
Del. quantity cm³/ : 213.0...217.0
1000 s: (210.0...220.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1070...1080

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 180.0...200.0
1000 s: (176.0...204.0)

Observe VDT-I-420/120
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 g 9
 Edition : 21.06.91
 Replaces : 27.5.91
 Test oil : ISO-4113

Combination no. : 0 402 678 814

Injection pump
 Pump designation : PE8P120A32OLS7801-2
 EP type number : 0 412 628 825
 Governor
 Governor design. : RSV350...1050POA535-
 4
 Governor no. : 0 421 833 352

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (4.15...5.35)

Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 500

Rack travel in mm : 13.90...14.10

Del.quantity cm³/ : 20.1...20.3
 100 s: (19.8...20.6)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 350.0
 Rack travel in mm : 5.6...5.8
 Del.quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 500
 Aneroid pressure h: 700
 Del.quantity : 201.0...203.0
 1000 : (198.0...206.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 90...98

Testing:
1st rack travel in: 11.50
Speed rpm : 1079...1080
2nd rack travel in: 4.00
Speed rpm : 1140...1158
4th rack travel in: 14.00
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 370...430

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 12.50...12.70
2nd speed rpm : 700
Rack travel in m: 14.10...14.30
3rd speed rpm : 900
Rack travel in m: 13.30...13.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 13.90...14.10

Measurement
Speed 1/min : 600

1st pressure hPa : 400
Rack travel in m: 12.30...12.50
2nd pressure hPa : 500
Rack travel in m: 12.60...12.80
3rd pressure hPa : 925
Rack travel in m: 14.00...14.10 *
4th pressure hPa : -
Rack travel in m: 10.80...11.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1100
Speed rpm : 1030
Del.quantity cm3/ : 181.0...184.0
1000 s: (178.0...187.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1100
Speed rpm : 700
Del.quantity cm3/ : 213.0...217.0
1000 s: (210.0...220.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 143.0...145.0
1000 s: (140.0...148.0)
Spread cm3 : 8.00
1000 s: (-)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 1070...1080

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

Remarks:

* Increase in control-rod travel with
respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 5,9 w
 Edition : 21.08.91
 Replaces : 13.5.91
 Test oil : ISO-4113

Combination no. : 0 402 736 806

Injection pump
 Pump designation : PES6P110A12ORS7213
 EP type number : 0 412 716 804
 Governor
 Governor design. : RQV400...1250PA964K
 Governor no. : 0 421 815 252

Customer-spec. information
 Customer : C.D.C.

Engine : 6BTA-A

1st version kW : 171.5
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 115...125

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45
 : (4.30...4.50)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 15.80...15.90

Del.quantity cm³/ : 16.8...17.0
 100 s: (16.5...17.3)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 400.0
 Rack travel in mm : 5.7...5.9
 Del.quantity cm³/ : 3.2...3.8
 100 s: (3.0...4.0)

Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
 travel mm : 0.70...1.10

2nd speed rpm : 400
 travel mm : 1.40...1.60

3rd speed rpm : 600
 travel mm : 2.90...3.30

4th speed rpm : 1300
 travel mm : 7.20...7.40

5th speed rpm : 1500
 travel mm : 9.10...9.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Aneroid pressure h: 1500
 Del.quantity : 168.5...170.5
 1000 : (165.5...173.5)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:
1st rack travel in: 14.80
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1475...1505
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 13...21

Testing:
Speed rpm : 275
Minimum rack travel: 7.20
Speed rpm : 400
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION
Speed rpm : 325...520

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 15.80...15.90
2nd speed rpm : 825
Rack travel in m: 14.70...14.90
3rd speed rpm : 700
Rack travel in m: 14.00...14.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1250
Pressure hPa : 1500
Rack travel mm : 15.80...15.90

Measurement
Speed 1/min : 1250

1st pressure hPa : -
Rack travel in m: 8.10...8.50
2nd pressure hPa : 375
Rack travel in m: 10.00...10.10
3rd pressure hPa : 935
Rack travel in m: 13.70...14.10

START CUT-OUT

Speed 1/min : 300 (310)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1500
Speed rpm : 825
Del.quantity cm³/ : 178.0...184.0
1000 s: (175.0...187.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 87.0...91.0
1000 s: (85.0...93.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...175.0
1000 s: (130.0...180.0)
Rack travel in mm : 12.40...13.40

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.70...5.90
Del.quantity cm³/ : 32.0...38.0
1000 s: (30.0...40.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: C.D.C # 3913440
Start-of-delivery mark 6° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 r
 Edition : 21.08.91
 Replaces : 18.2.91
 Test oil : ISO-4113

Combination no. : 0 402 736 807

Injection pump
 Pump designation : PES6P110A120RS7214
 EP type number : 0 412 716 805
 Governor
 Governor design. : RQV350...1100PA964-1
 K
 Governor no. : 0 421 815 253

Customer-spec. information
 Customer : C.D.C.

Engine : 6CTA-A

1st version kW : 201.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 115...125

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test Lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45
 : (4.30...4.50)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 15.70...15.80

Del.quantity cm³/ : 20.6...20.8

100 s: (20.3...21.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.7...5.9

Del.quantity cm³/ : 2.7...3.3

100 s: (2.5...3.5)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.80...2.00

2nd speed rpm : 450
 travel mm : 3.10...3.50

3rd speed rpm : 600
 travel mm : 5.10...5.50

4th speed rpm : 1000
 travel mm : 8.10...8.30

5th speed rpm : 1200
 travel mm : 9.60...10.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 1500

Del.quantity : 206.0...208.0

1000 : (203.0...211.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 64...72

Testing:

1st rack travel in: 14.40
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1300...1330
4th rack travel in: 14.00
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.8

Testing:

Speed rpm : 275
Minimum rack travel: 7.20
Speed rpm : 350
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 15.70...15.80
2nd speed rpm : 650
Rack travel in m: 13.20...13.60
3rd speed rpm : 1100
Rack travel in m: 15.40...15.60

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1050
Pressure hPa : 1500
Rack travel mm : 15.70...15.80

Measurement

Speed 1/min : 1050

1st pressure hPa : -
Rack travel in m: 8.40...8.80
2nd pressure hPa : 340
Rack travel in m: 10.20...10.30

N20

3rd pressure hPa : 840
Rack travel in m: 13.60...14.00

START CUT-OUT

Speed 1/min : 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500
Speed rpm : 650
Del.quantity cm³/ : 187.5...193.5
1000 s: (184.5...196.5)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 98.0...102.0
1000 s: (96.0...104.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 14.40
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...175.0
1000 s: (130.0...180.0)
Rack travel in mm : 11.00...12.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.70...5.90
Del.quantity cm³/ : 27.0...33.0
1000 s: (25.0...35.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: C.D.C # 3916627

Start-of-delivery mark = 5.5° after
start of delivery cyl. 1.

Bow dimension:

Sliding-sleeve position = 37.0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 5,9 w 1
 Edition : 21.08.91
 Replaces : 14.12.90
 Test oil : ISO-4113

Combination no. : 0 402 736 810

Injection pump
 Pump designation : PES6P110A120RS7213
 EP type number : 0 412 716 804
 Governor
 Governor design. : RQV400...1250PA964-2
 K
 Governor no. : 0 421 815 254

Customer-spec. information
 Customer : C.D.C.

Engine : 6BTA-A

1st version kW : 141.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 115...125

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45
 : (4.30...4.50)

Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 14.80...14.90

Del.quantity cm³/ : 15.9...16.1

100 s: (15.6...16.4)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 400.0

Rack travel in mm : 5.4...5.6

Del.quantity cm³/ : 3.2...3.8

100 s: (3.0...4.0)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
 travel mm : 0.70...1.10

2nd speed rpm : 400
 travel mm : 1.40...1.60

3rd speed rpm : 600
 travel mm : 2.90...3.30

4th speed rpm : 1300
 travel mm : 7.20...7.40

5th speed rpm : 1500
 travel mm : 9.10...9.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Aneroid pressure h: 1200
 Del.quantity : 159.0...161.0
 1000 : (156.0...164.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:
1st rack travel in: 13.80
Speed rpm : 1295...1305
2nd rack travel in: 4.00
Speed rpm : 1460...1490
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19

Testing:
Speed rpm : 275
Minimum rack travel: 7.20
Speed rpm : 400
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 14.80...14.90
2nd speed rpm : 800
Rack travel in m: 13.10...13.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1250
Pressure hPa : 1200
Rack travel mm : 14.80...14.90

Measurement

Speed 1/min : 1250

1st pressure hPa : -
Rack travel in m: 8.30...8.70
2nd pressure hPa : 415
Rack travel in m: 10.20...10.30
3rd pressure hPa : 740
Rack travel in m: 13.20...13.60

START CUT-OUT

N22

Speed 1/min : 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 800
Del. quantity cm³/ : 158.0...164.0
1000 s: (155.0...167.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 95.5...99.5
1000 s: (93.5...101.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.80
Speed rpm : 1295...1305

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 135.0...175.0
1000 s: (130.0...180.0)
Rack travel in mm : 12.00...13.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.40...5.60
Del. quantity cm³/ : 32.0...38.0
1000 s: (30.0...40.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: C.D.C # 3919090

Start-of-delivery mark = 5.5° after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 5,9 w 2
 Edition : 21.08.91
 Replaces : 13.5.91
 Test oil : ISO-4113
 Combination no. : 0 402 736 811
 Injection pump
 Pump designation : PES6P110A12ORS7213
 EP type number : 0 412 716 804
 Governor
 Governor design. : RQV400...1250PA964-3
 K
 Governor no. : 0 421 815 255

Customer-spec. information
 Customer : C.D.C.

Engine : 6BTA-A

1st version kW : 147.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 115...125

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...213

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45
 : (4.30...4.50)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 14.80...14.90

Del.quantity cm³/ : 15.8...16.0

100 s: (15.5...16.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 400.0

Rack travel in mm : 5.5...5.7

Del.quantity cm³/ : 3.2...3.8

100 s: (3.0...4.0)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325

travel mm : 0.70...1.10

2nd speed rpm : 400

travel mm : 1.40...1.60

3rd speed rpm : 600

travel mm : 2.90...3.30

4th speed rpm : 1300

travel mm : 7.20...7.40

5th speed rpm : 1500

travel mm : 9.10...9.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 1200

Del.quantity : 158.5...160.5

1000 : (155.5...163.5)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:
1st rack travel in: 13.80
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1460...1490
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 12...20

Testing:
Speed rpm : 275
Minimum rack travel: 7.20
Speed rpm : 400
Rack travel in mm : 5.50...5.70

CONSTANT REGULATION
Speed rpm : 325...520

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 14.80...14.90
2nd speed rpm : 800
Rack travel in m: 13.20...13.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1250
Pressure hPa : 1200
Rack travel mm : 14.80...14.90

Measurement
Speed 1/min : 1250

1st pressure hPa : -
Rack travel in m: 8.20...8.60
2nd pressure hPa : 410
Rack travel in m: 10.00...10.10
3rd pressure hPa : 755
Rack travel in m: 13.20...13.60

START CUT-OUT

N24

Speed 1/min : 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 156.5...162.5
1000 s: (153.5...165.5)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 90.0...94.0
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...175.0
1000 s: (130.0...180.0)
Rack travel in mm : 11.90...12.90

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 32.0...38.0
1000 s: (30.0...40.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : C.D.C # 3918321

Start-of-delivery mark = 5.5° after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 r 6
 Edition : 21.08.91
 Replaces : 18.02.91
 Test oil : ISO-4113

Combination no. : 0 402 736 812

Injection pump
 Pump designation : PES6P110A120RS7214
 EP type number : 0 412 716 805
 Governor
 Governor design. : RQV350...1200PA964-4
 K
 Governor no. : 0 421 815 256

Customer-spec. information
 Customer : C.D.C.

Engine : 6CTA-A

1st version kW : 156.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 115...125

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45
 : (4.30...4.50)

Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.60...12.70

Del.quantity cm³/ : 14.7...14.9

100 s: (14.4...15.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.7...5.9

Del.quantity cm³/ : 2.7...3.3

100 s: (2.5...3.5)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.80...2.00

2nd speed rpm : 450
 travel mm : 3.10...3.50

3rd speed rpm : 700
 travel mm : 5.90...6.30

4th speed rpm : 1200
 travel mm : 9.00...9.20

5th speed rpm : 1400
 travel mm : 10.70...11.10

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Aneroid pressure h: 1200
 Del.quantity : 147.5...149.5
 1000 : (144.5...152.5)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 11.60
Speed rpm : 1245...1255
2nd rack travel in: 4.00
Speed rpm : 1375...1405
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 275
Minimum rack travel: 7.20
Speed rpm : 350
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION
Speed rpm : 325...520

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 12.60...12.70
2nd speed rpm : 650
Rack travel in m: 11.20...11.60
3rd speed rpm : 550
Rack travel in m: 11.10...11.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1200
Pressure hPa : 1200
Rack travel mm : 12.60...12.70

Measurement
Speed 1/min : 1200

1st pressure hPa : -
Rack travel in m: 8.00...8.40
2nd pressure hPa : 225
Rack travel in m: 9.20...9.30
3rd pressure hPa : 515
Rack travel in m: 11.10...11.50

START CUT-OUT

Speed 1/min : 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 650
Del.quantity cm³/ : 151.0...157.0
1000 s: (148.0...160.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 90.0...94.0
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.60
Speed rpm : 1245...1255

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...175.0
1000 s: (130.0...180.0)
Rack travel in mm : 11.00...12.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.70...5.90
Del.quantity cm³/ : 27.0...33.0
1000 s: (25.0...35.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : C.D.C. # 3917088

Start-of-delivery mark = 5.5° after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 r 4
 Edition : 21.08.91
 Replaces : 7.1.91
 Test oil : ISO-4113

Combination no. : 0 402 736 813

Injection pump
 Pump designation : PES6P110A120RS7214
 EP type number : 0 412 716 805
 Governor
 Governor design. : RQV350...1100PA964-5
 K
 Governor no. : 0 421 815 257

Customer-spec. information
 Customer : C.D.C.

Engine : 6CTA-A

1st version kW : 187.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 115...125

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45
 : (4.30...4.50)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 14.50...14.60

Del.quantity cm³/ : 18.6...18.8

100 s: (18.3...19.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.7...5.9

Del.quantity cm³/ : 2.7...3.3

100 s: (2.5...3.5)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350

travel mm : 1.80...2.00

2nd speed rpm : 450

travel mm : 3.10...3.50

3rd speed rpm : 600

travel mm : 5.10...5.50

4th speed rpm : 1000

travel mm : 8.10...8.30

5th speed rpm : 1200

travel mm : 9.60...10.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 1200

Del.quantity : 186.5...188.5

1000 : (183.5...191.5)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 62...70

Testing:
1st rack travel in: 13.50
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 14.00
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 275
Minimum rack travel: 7.20
Speed rpm : 350
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION
Speed rpm : 325...520

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 14.50...14.60
2nd speed rpm : 650
Rack travel in m: 13.50...13.70
3rd speed rpm : 500
Rack travel in m: 12.90...13.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1100
Pressure hPa : 1200
Rack travel mm : 14.50...14.60

Measurement
Speed 1/min : 1100

1st pressure hPa : -
Rack travel in m: 8.30...8.70
2nd pressure hPa : 285
Rack travel in m: 9.70...9.80
3rd pressure hPa : 700
Rack travel in m: 12.60...13.00

START CUT-OUT

Speed 1/min : 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 650
Del. quantity cm³/ : 193.0...204.0
1000 s: (195.0...207.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 98.0...102.0
1000 s: (96.0...104.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.50
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 135.0...175.0
1000 s: (130.0...180.0)
Rack travel in mm : 10.80...11.80

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.70...5.90
Del. quantity cm³/ : 27.0...33.0
1000 s: (25.0...35.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : C.D.C. # 3916628

Start-of-delivery mark = 5.5° after
start of delivery cyl. 1.